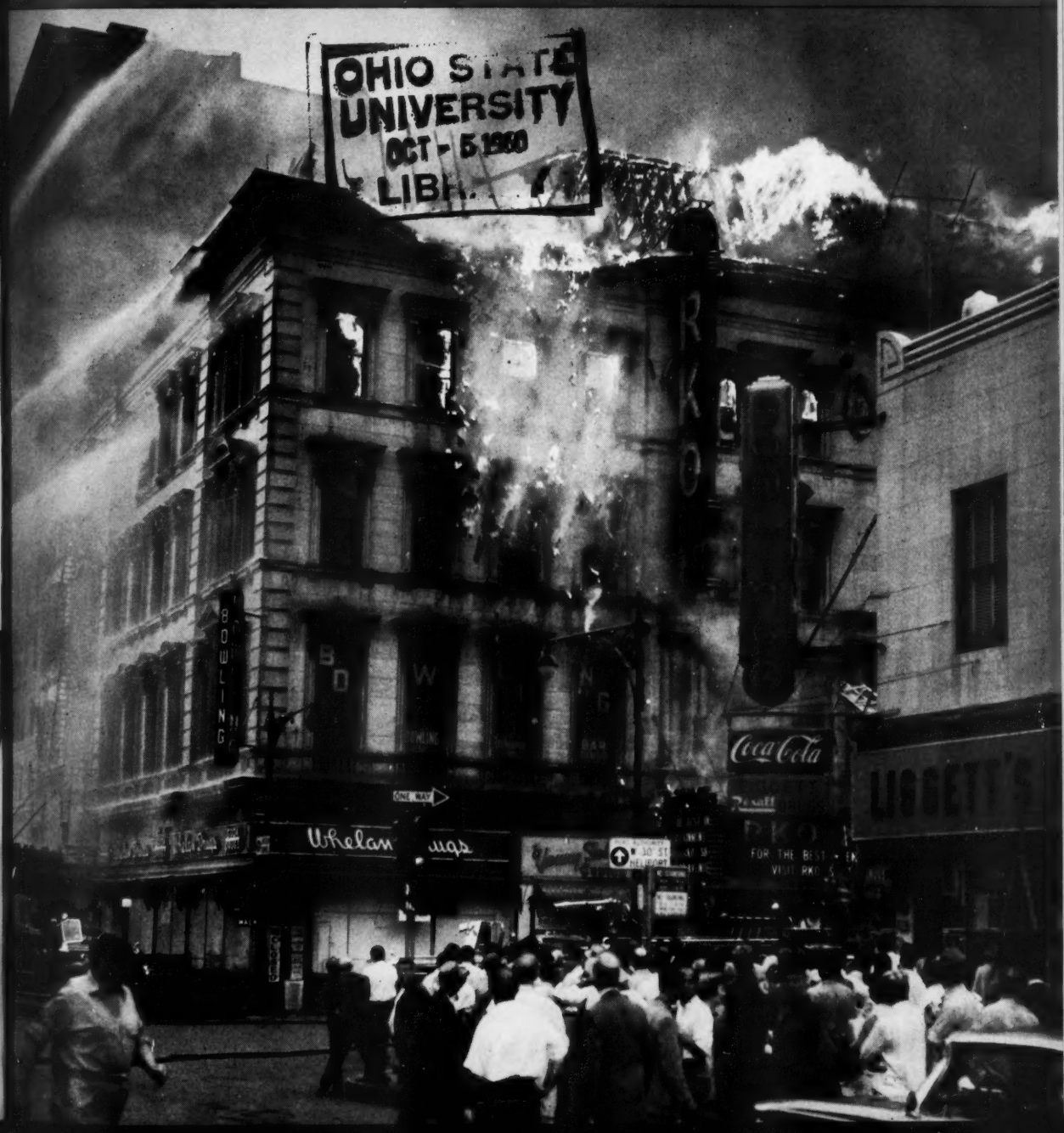
FIRE ENGINEERING

SEPTEMBER
1960

The Journal of the Fire Protection Profession Since 1877

A Reuben H · Donnelley Publication

Flaming debris falls to street at fifth-alarm fire in vacant building at Eighth Avenue and 23rd Street, New York City, on June 29. Major problem was to keep the blaze from spreading to the 14-story hotel in background.—Photo by Jim Heffernan



IMPACT PROTECTION!

Heavy, flaming debris smashing over fire fighters' heads is among hazards that top the list of most frequent fire department injuries.

Knowing this, it's easy to see why our engineers have designed HARDBOILED™ fire helmets to insure maximum impact protection, with minimum impact transmission. Even when exposed to temperatures as low as − 60° F. or as high as + 2,400° F., these tough fiber-glass shells surpass Federal and State Specifications for head protection. Yet, complete with either POWER-BLOC™ or standard suspension, they weigh only 22 ounces.

We can safely say, "Bullard fire helmets are the best impact protection a fireman can use. Try it and you'll see that no fire helmet surpasses Bullard...in comfort, safety and economy."

BULLARD
INDUSTRIAL SAFETY EQUIPMENT

Write for fire department catalog.

E. D. BULLARD COMPANY • SAUSALITO, CALIFORNIA • R 3 RIDGES FORM A BULLARD TRADE MARK, REG. U. S. PAT. OFF. COPYRIGHT 1960, E. D. BULLARD

. . . and don't forget *Quality!*

When a purchase involves protection, the lower priced product often proves to be more costly. The few dollars extra may buy a life—possibly *your* life!

Famous siren model numbers by FEDERAL, "Q"-"C"-"70" and others, have become a by-word. Costs may have pushed up prices, but *value per dollar*, from FEDERAL, has risen even more.

Modern sirens with these familiar FEDERAL model numbers differ greatly from the originals. Ball bearings, silicones, plastics and metals of today's techniques are a far cry from the cotton insulated, sand cast, grease-cup models of yesteryear.

FEDERAL Warning Lights and the Electronic Siren likewise reflect the latest in precision and provide a durability and dependability never available in the "cheap" imitation.

Our successful business has been built on sixty years of the highest quality—we intend to keep it that way!

DON'T BE MISLED—SPECIFY FEDERAL **Coaster sirens and Beacon Ray Lights for your apparatus! Write for catalog #300 *today!***

FEDERAL SIGNAL SIGN and Corporation

13602 S. Western Ave., Blue Island, Ill.

FIRE ENGINEERING

VOL. 113 SEPTEMBER, 1960 NO. 9

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Conference Report

The International Association of Fire Chiefs, in its 87 years of activity on behalf of the fire service in the United States and Canada, has become progressively more important to the fire service and more influential as the recognized voice of the service.

Hardly a week passes in which one does not read in the daily press the phrase, "According to the International Association of Fire Chiefs." The Fire Administration Institute, founded by the IAFC, is constantly increasing in stature. The IAFC has taken the lead in recent governors' conferences on fire prevention, and is spearheading a program for fire defense in cooperation with the Office of Civil and Defense Mobilization.

As a corollary to these facts, the IAFC Annual Conference is of interest and import to every member of the fire service. The staff of FIRE ENGINEERING will, therefore, be well represented at the conference. All sessions of the conference will be fully covered, and comprehensively reported in our October issue. Do not miss this complete report on the discussions, deliberations and decisions of the leaders of the fire service, and the pictorial coverage of the demonstrations and developments in techniques, equipment and facilities.

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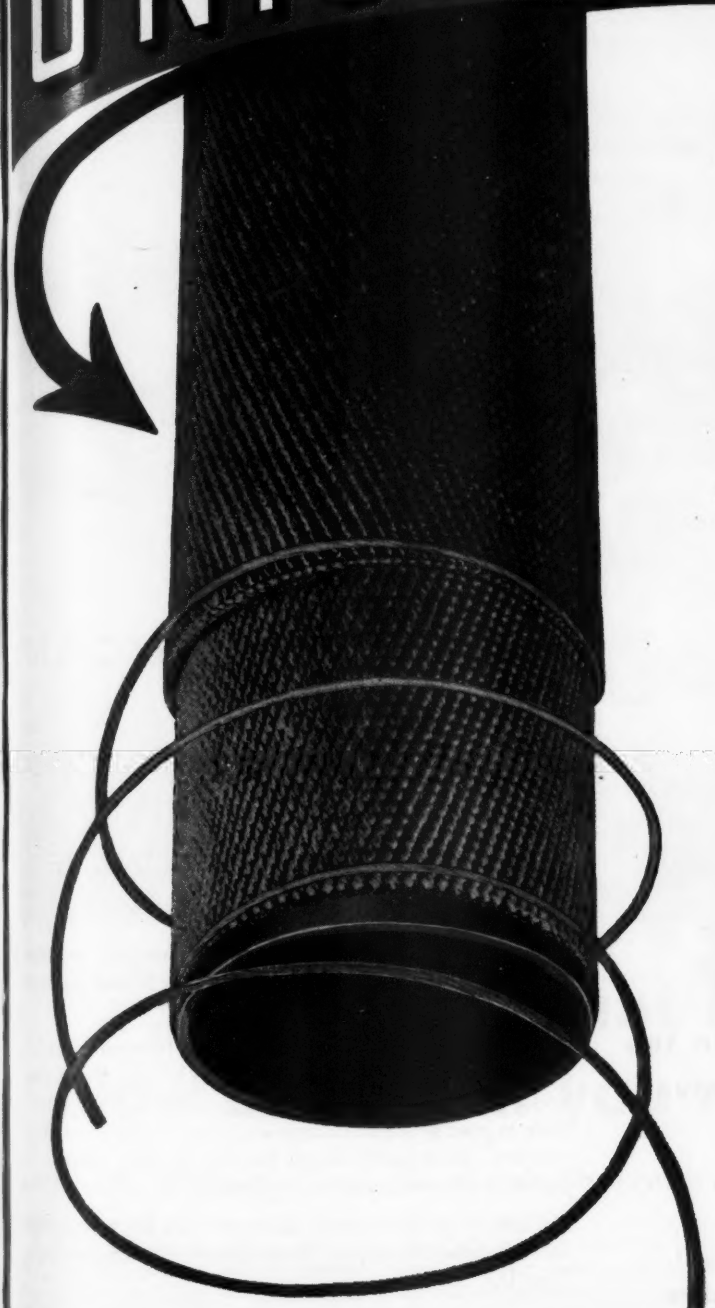
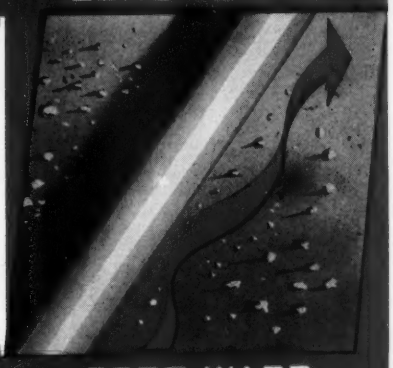
UNISPUN FIRE HOSE



ZERO TURNS



ZERO WARP

ZERO RISE

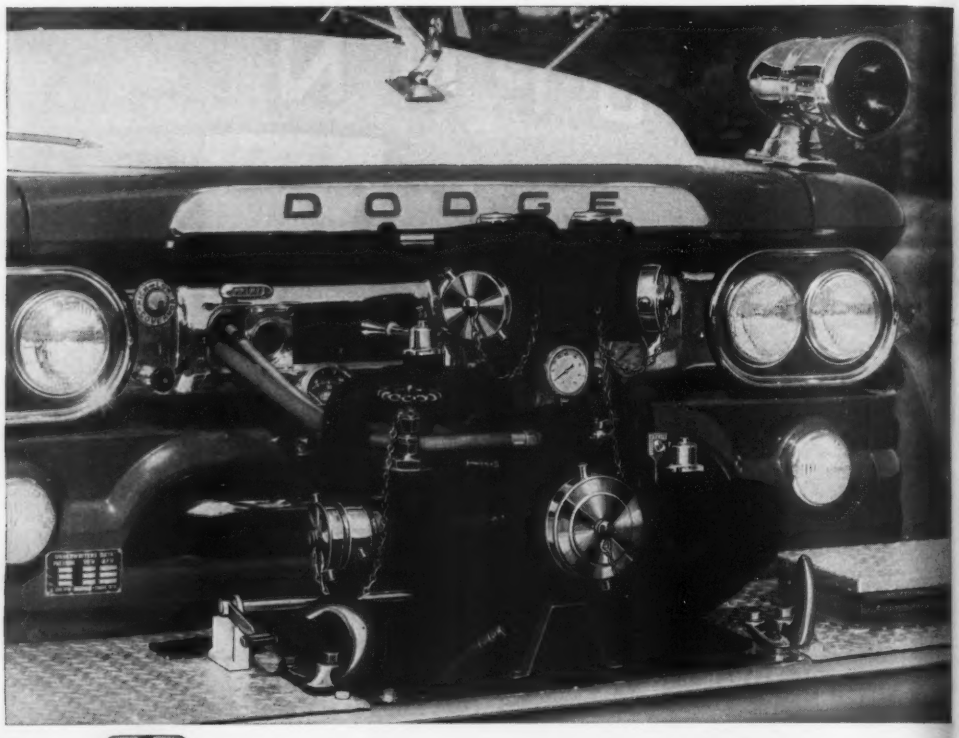
WRITE US OR CONTACT YOUR AUTHORIZED FABRIC FIRE HOSE REPRESENTATIVE

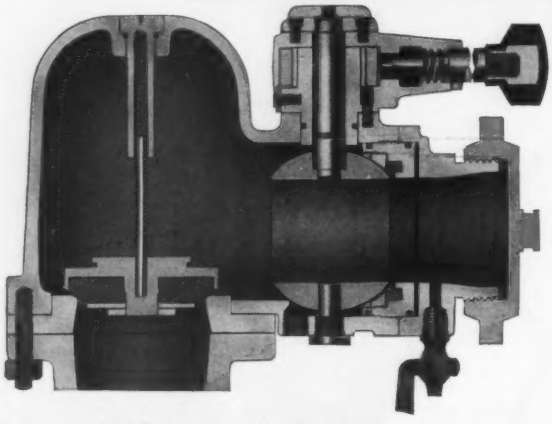
WITH WEATHERMATE PROTECTION AND PRES-R-LOCK COUPLINGS

FABRIC FIRE HOSE COMPANY ★ SANDY HOOK, CONN.

Exclusive Manufacturers of Fire Hose Since 1869 ★★★★★

IN CANADA *Pierre Thibault* CANADA, LTD., LTEE., PIERREVILLE, QUEBEC





BARTON-AMERICAN UA-50 Front Mounted Pumps

now offered with

BALL-TYPE LOCKING VALVES

Time-Proven Check Valve Retained

Barton-American ball-type locking valves move into position for any capacity or volume you need — lock in that position with a quarter turn of the handle.

The UA-50 gives you all the advantages of front mounted location: You can fight fires *on the move* with two or more hose lines. With drive wheels on solid ground you can "nose" down to pond or stream to draft water inaccessible to midship pumpers. Front pumps weigh less, use no body space . . . you can carry more water and equipment.

Precision built of best materials — yet *costs less* to buy and install because it's simpler. Investigate the Barton-American Type UA now!

WRITE TODAY FOR BULLETIN 8330-C

You get these advantages in the UA-50 Ball-type Locking Valve:

1. **Smooth-as-silk operation.**
2. **Regulates volume as you want it.**
3. **Locks positively in any position.**
4. **A quarter-turn of the handle locks it.**
5. **Check valve eliminates need to close hose lines to prime pump.**
6. **Rugged, heavy-duty construction.**
7. **Modern, smooth appearance.**

You also get UA Pump features such as: *Exclusive,* positive interlocking pump clutch that can't slip at a fire; both volume and high pressure to 400 pounds for effective fog streams; fast, reliable, engine vacuum primer; effective, frost-proof construction; plus many other UA advantages.

AMERICAN FIRE PUMP COMPANY

P. O. BOX 219-A BATTLE CREEK, MICHIGAN

Photo courtesy Petersburg, Virginia Fire Department.

The hose that doesn't blow out when you need it most

Long-lasting B.F.Goodrich hose pays off when the pressure's on

"DOESN'T blow out when you need it most"—that's the main reason B.F.Goodrich hose is used exclusively by the Petersburg, Virginia Fire Department.

Chief J. N. Farmer goes on to say, "I first bought B.F.Goodrich hose in 1941, and have not bought any other brand since then. BFG hose is stronger. We've never had a length of it blow out under pressure. I think it lasts at least twice as long as any other hose available."

Chief Farmer is right. B.F.Goodrich hose is stronger, and at the same time, lighter, more flexible, too. That's because of the "filler" cords of Dacron fiber which go around the hose and carry the load under pressure. Dacron cords are thinner, and three times stronger than cords used in ordinary hose. As a result, B.F.Goodrich hose not only lasts longer, but is easier to handle, coils tighter, is more compact. Hundreds of extra feet can be racked on a truck.

The extra minutes needed to get heavy, bulky hose into action, or replace a blown out section or put on more hose for longer lines are all it takes to wipe out the money saved on so-called "just as good as" hose. The quality features in B.F.Goodrich hose that prevent these delays add only a few cents per foot to its cost, but are worth much more when the pressure's on.

Next time you need fire hose, be sure and talk to a B.F.Goodrich distributor before you buy. You'll save money with longer-lasting BFG hose. *B.F.Goodrich Industrial Products Co., Dept. M-918, Akron 18, Ohio.*

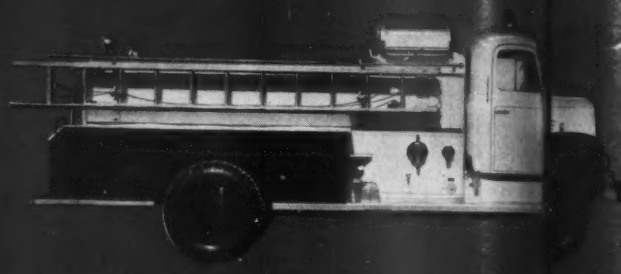
B.F.Goodrich

FIRE HOSE

FROM EVERY ANGLE

HPV* FIREFIGHTERS ARE FIREMEN-DESIGNED, FEA

From every angle—performance, features, dependability, design—John Bean makes the best apparatus available for versatile, effective fire protection. Every feature, perfected by John Bean firefighter engineers, results from recommendations of firemen and chiefs in departments throughout the U.S. More design suggestions come from John Bean field sales representatives, many of whom are former fire chiefs. See for yourself with a demonstration in your community. Then you'll agree that John Bean meets your fire protection needs best.



HPV's*

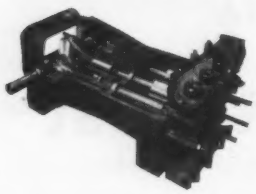
2-WAY PUNCH—

***HIGH PRESSURE FOG**

AND VOLUME PUMPS

John Bean High Pressure Fog and Volume equipment gives you the combined fire-fighting power of two great pumps—John Bean's original high pressure fog pump and the Class A, Underwriters'-approved centrifugal volume pump. For fast attack, high pressure fog stops fires before they grow. When you need volume, you can depend on John Bean's unmatched performance. Get both proven methods in the same apparatus with John Bean HPV.

FAMOUS BEAN HIGH PRESSURE PUMP

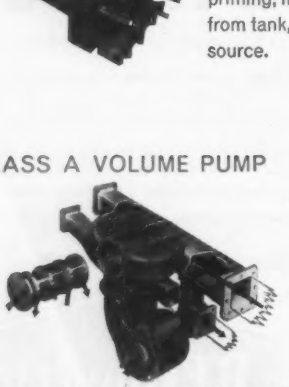


This original high pressure fog pump operates at 850 psi, delivers 60 gpm through two hose lines. Self-priming, it can be supplied from tank, hydrant or draft source.

PATENTED FOG GUN
(3 guns standard with each unit)

Easily operated by one man, this famous gun features instant, on-off trigger action. Rotating barrel permits quick selection of fog patterns from close-up sprays to long range fog.

CLASS A VOLUME PUMP



The rugged, John Bean centrifugal volume pump is N.B.F.U.-tested and approved for performance dependability. Available in capacities of 500, 600 or 750 gpm.

400-FT. HIGH PRESSURE HOSE

Standard equipment with each HPV Firefighter includes two, 200-ft. reels of special, high pressure (5000 psi discharge) hose.

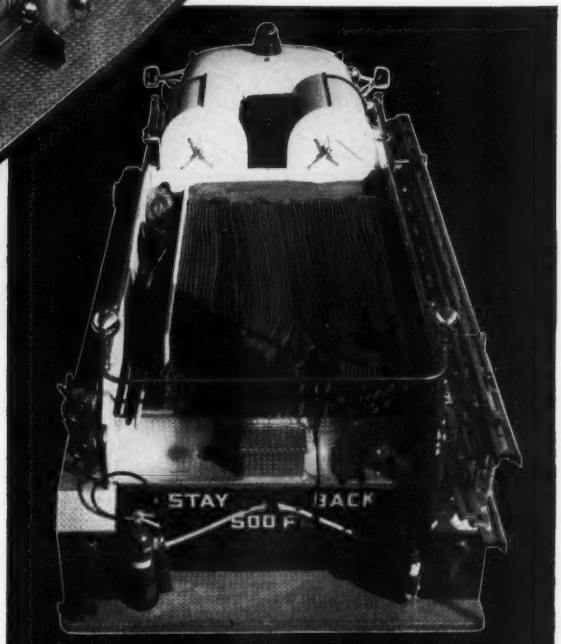
20-FT. SUCTION HOSE

Other standard equipment includes two 10-foot lengths of 4½-inch hard suction hose, complete with hydrant adapters and suction screens.

For PROOF of John BEAN FIREFIGHTER EFFECTIVENESS, WRITE

John BEAN®

ED, FEATURE PACKED



Smooth, level hose bed provides space for 1200 ft. of 2½-inch and 400 ft. of 1½-inch double-jacketed fire hose. Extra-wide rear platform with non-skid treadplate.

HEATED REEL COMPARTMENTS

Two enclosed reel compartments, as well as pump, valves, gauges and controls are warmed by engine heat to assure dependability in freezing weather.

500-GAL. WATER TANK

Big, 500-gal. tank supplies water for high pressure fog lines. Baffling prevents water surge, assures smooth cornering.

BALL-TYPE DISCHARGE GATES

Rugged, quick-acting gates will not leak under pressure or suction, turn easily at all operating pressures.

RUGGED CONSTRUCTION

Body panelling and compartments are special 12-gauge steel, completely reinforced with U-formed top.

THE **ORIGINAL** *HIGH PRESSURE FOG*

TODAY for DEMONSTRATION

John BEAN®

DIVISION OF
FOOD MACHINERY AND CHEMICAL CORPORATION
LANSING, MICHIGAN — SAN JOSE, CALIFORNIA

fmc

These men can get into action faster

Here's what they say about hose jacketed entirely with "Dacron":

"We can pack more hose on the trucks . . . and can repack it wet and move out to another call fast. Fire hose of 'Dacron' is lighter and more flexible, too."

CHIEF MILLER,
Madison Fire Department, Illinois

Speed's the thing in a fire. Fire spreads fast. Fire must be controlled fast. And hose jacketed 100% with "Dacron"* polyester fiber can often save you those extra critical seconds.

This is why you'll find hose of "Dacron" in more and more fire houses throughout the country. These departments have discovered the same things as the men above:

- You can save precious minutes. Hose of "Dacron" is light, easy to handle and maneuver.

their fire hose because of "Dacron"®

POLYESTER FIBER

"Feeds off the truck fast. Doesn't slow us down once it's on the ground, because hose jacketed 100% with 'Dacron' is lighter and easier to maneuver."

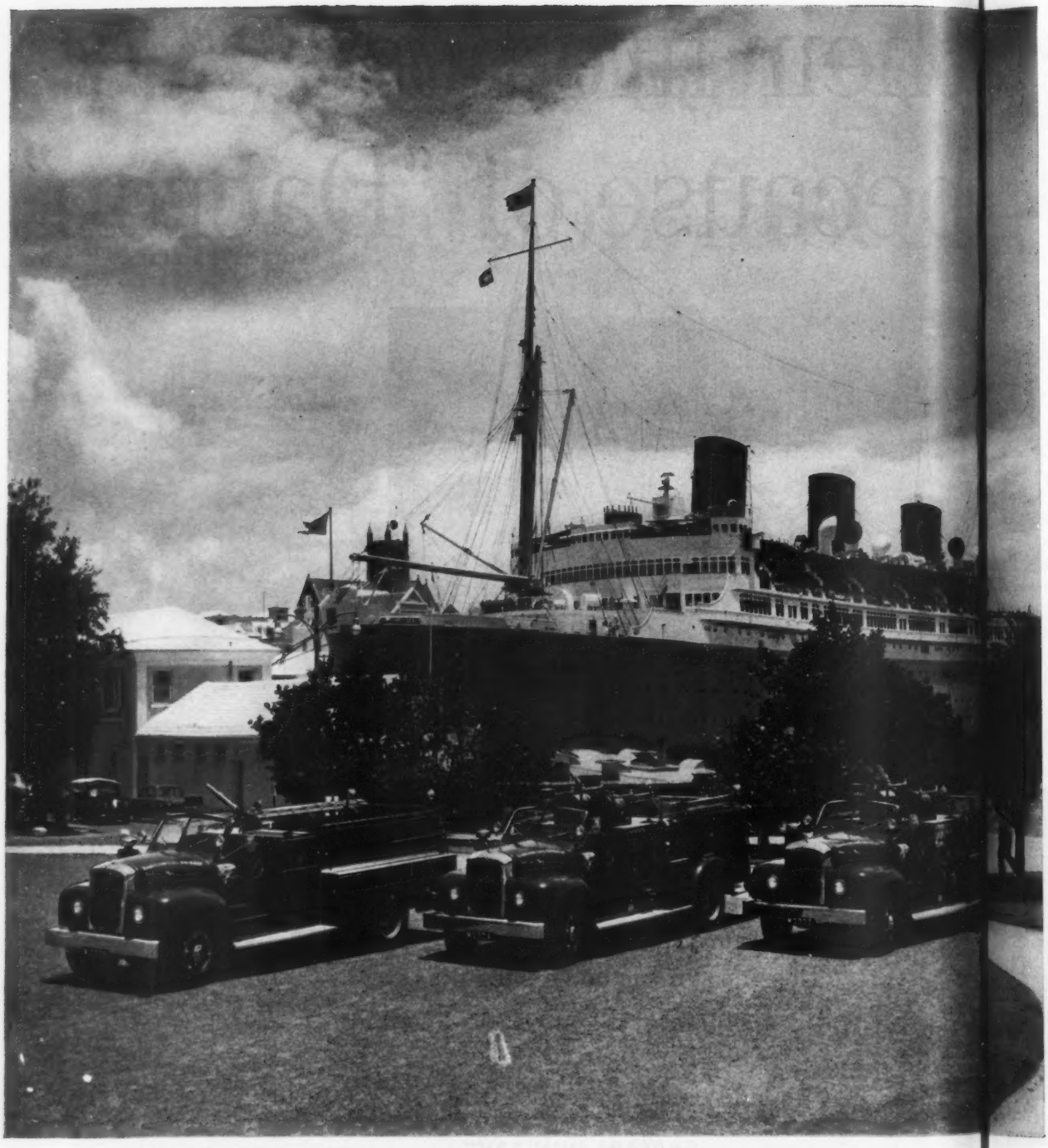
CAPTAIN DUNLEAVY,
Belleville Fire Department, New Jersey

- You're *always* ready for another fire. Hose of "Dacron" can be repacked wet . . . *can't* be damaged by rot or mildew.
- You get extra economy, too. Hose of "Dacron" stands up under rough abrasion, oils and chemicals; gives you many years of dependable service.

See your supplier . . . or write for nearby sources and free booklet on "The Hose That Needs No Drying". E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., Room 31E, Wilmington 98, Del.

DU PONT
REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . *THROUGH CHEMISTRY*

*"Dacron" is Du Pont's registered trademark for its polyester fiber.
Enjoy THE DU PONT SHOW WITH JUNE ALLYSON—Monday nights—CBS-TV.



FIRST DIESEL FIRE APPARATUS built by major manufacturer who makes both apparatus and own diesel engine are these three units recently delivered to Hamilton Fire Brigade, Hamilton, Bermuda. Two 1250-gpm pumpers at right have supplementary front suction, 200 gal. booster tanks and two hose reels each. Hose wagon and equipment carrier at extreme left carries 8400 ft. of English fire hose (6000 ft. 2½", 1200 ft. 3½", and 1200 ft. 1½" hose), and equipment such as forcible entry tools, cutting torches, gas masks, resuscitators, and smoke ejectors. All three units have 230 hp turbocharged Mack-built Thermodyne diesel engines, Fire Department quick build-up air brake systems, 24-volt electric starting systems, and 100 amp. alternators.

COMPLETE LINE OF PUMPERS—500 to 1250 GPM...SQUAD AND HOSE WAGONS...AERIALS 65' to 146'...COMBINATION LADDER TRUCKS

Versatility at work...

Mack diesel apparatus help solve Bermuda's fire protection problem

For the first time in the history of American apparatus manufacture, a major maker of fire-fighting equipment has installed a diesel engine of its own manufacture in fire apparatus.

The place? Hamilton, Bermuda.

The reason? Only 21 sq. mi. in land area, Bermuda has limited storage space for fuel . . . must extract from the fuel it brings in the greatest amount of work.

Thus Hamilton poses a special problem in fire protection. For as Bermuda's requirements call for heavy-duty apparatus with large pumping capacity, they likewise call for powerplants which use the least fuel possible.

That means diesels—which require far fewer gallons of fuel per engine hour. And that means Macks, for the world-famous Thermodyne® diesel engine has already proved itself in millions of miles of highway and city service . . . is why Mack is acknowledged as the leader in diesel-powered vehicles.

It means Mack fire apparatus for other reasons, too. Because Mack makes more of its components—engines, transmissions, rear axles and rear four-wheel-drive tandems—Mack is more able to custom-build its fire apparatus to the standards of a single department, as it has for Bermuda.

Every department needs the best possible equipment to protect against fire. And that equipment is Mack. No other apparatus manufacturer can be so versatile . . . no other apparatus can be "Built like a Mack!" Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ont.

7671

MACK FIRST NAME FOR **FIRE APPARATUS**

PROTECTING PEOPLE AND PROPERTY, Hamilton's three diesel-powered Mack apparatus are shown in front of one of resort island's many modern hotels to which tourists from all over the world are attracted. Tourism is the staple of Bermuda economy, and most modern, most efficient fire apparatus is used for best protection.

MIDWESTERN

Safety Clothing for Firemen

The Original STRIPED SAFETY COAT

The striped safety coat for firemen is an Original Midwestern development — first in the field — a leader ever since its introduction 19 years ago.

The BRILLIANT YELLOW stripes are actually rubberized into the black rubber . . . an exclusive feature that defies comparison with substitute or imitation models where the stripes are glued, sewed or painted on the material.

When working under hazardous conditions in smoke, fog, dust or darkness, firemen deserve the superior quality, design, comfort and safety features offered by the Original Midwestern Safety Coat.

Many Fire Chiefs who insist on the best of protection for the men of their department specify MIDWESTERN SAFETY garments to the last man because every outstanding Midwestern feature is original. All fabrics are extremely soft and flexible and have the qualities to stay that way at varying temperatures. You can always distinguish a MIDWESTERN SAFETY garment by the soft feeling of the material in both rubber and fabric type garments.

We have always designed and constructed our garments with the one thought . . . that every fireman deserves complete protection in his hazardous work of protecting life and property against the ravages of fire.

COMBINATION BUNKER SUITS

The many weights of both rubber coated and cloth type materials offered in our MIDWESTERN Quick-Hitch suit makes this combination ideal for all sections of the domestic market and export. Also, both coat and bunker pants may be purchased with or without detachable wool linings.

MIDWESTERN SAFETY MANUFACTURING CO.
Mackinaw, Illinois

☐ Have Midwestern representative call with complete information and prices.

☐ Send Free Catalog and fabric samples.

Name_____

Address_____

City_____ State_____

NONE GENUINE WITHOUT THIS TRADE

MIDWESTERN SAFETY MFG. CO., Mackinaw, Ill.

Located in the heart of the Greater Peoria Manufacturing Area

Manufacturers of the Famous MACKINAW Safety Coat

new

M-S-A® ONE-HALF-HOUR CHEMOX®

Try this new lightweight oxygen breathing apparatus on for size. Note the simplified design. Save on low operating costs. Watch the wearer's quick acceptance. **Here's why:**

PRESSURE RELIEF VALVE

Fully automatic — no manual operation required.

FACEPIECE

Monocular lens CLEARVUE* Facepiece provides unobstructed vision.

HEADBANDS

They're made of strong, long-lasting nylon.

BREATHING TUBE

Just a single short one. But close convolutions greatly extend its length for full head movement.

TIMER

Fully recessed for compactness. Rings continually for 17 seconds.

CANISTER

Round, simplified, inexpensive. Rated at 30 minutes. Materially reduces operating costs.

*Trademark

INSTANT OPERATION

An optional unit is now available for instant operation even at temperatures below zero.

CANISTER HOLDER

Easy acting lever holds canister securely in place—cannot open accidentally.

BREATHING BAG

"Picture-frame" type. Encircles the canister completely, providing full unrestricted flow.

HARNESS

Also strong, long-lasting nylon. Rides comfortably and lightly without hampering.

For a demonstration or technical bulletin on this new respiratory protective equipment, contact your MSA Fire Department distributor or the nearest MSA sales engineer. Write: Mine Safety Appliances Company, Pittsburgh 8, Pennsylvania.

MSA SAFETY EQUIPMENT HEADQUARTERS

MSA backs up its label with selection, quality, research, experience

ROILINE V8 for FIRE FIGHTING

The ROILINE H884 is a high compression, overhead valve engine with the advantages of *extra* speed and power. This flexible V-8 is designed for the instantaneous response and quick acceleration necessary to fire fighting equipment. The sturdy forged-steel crankshaft is short, due to V-8 compactness, with large diameter, wide surface bearing areas. The result is smooth operation with the least amount of vibration. The combination of V-8 design, sturdy, compact construction, and quick acceleration makes the ROILINE H884 engine a top performer.

Model H884

ADVANCED V-8 DESIGN
330 MAXIMUM HP.
884 CU. IN. DISPL.
DUAL IGNITION AVAILABLE
QUICK ACCELERATION
GOOD FUEL ECONOMY
LOW MAINTENANCE COST

501

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN
New York • Tulsa • Los Angeles / **Factories: Waukesha, Wisconsin and Clinton, Iowa**

repair hydrant traffic damage FAST

...without loss of water...without water shut-off...without digging

The Mueller AWWA Improved Fire Hydrant is quickly put back into action when knocked over.

Mueller's Safety Flange design prevents breakage of the hydrant barrel and bent or broken operating stem. Hydrant safety mechanism snaps off cleanly just above the ground line.

The compression-type main valve stays closed. No water is lost to affect pressure at neighboring hydrants. No damage is caused by flowing water. Lower stem section is held solidly in place to permit easy repair without digging.

The simple, inexpensive repair kit shown below contains all parts needed to completely restore hydrant to service in a matter of minutes.

Safety Flange Repair Kit

Consists of safety flange, safety stem coupling, safety flange gasket and can of Mueller hydrant lubricating oil.

Write for complete information and specifications.

MUELLER CO. Since 1857 SERVING the Water and Gas Industries QUALITY

4383

MUELLER CO.
DECATUR, ILL.

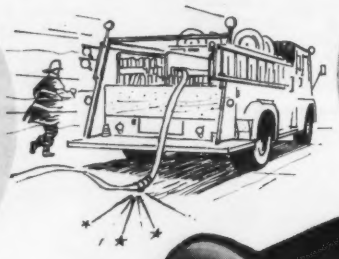
Factories at: Decatur, Chattanooga, Los Angeles
In Canada: Mueller, Limited; Sarnia, Ontario

ELKHART X-5 X-TRUDE

THE NEW | SUPER STRENGTH COUPLING

WITH FULL RIB REINFORCEMENT

Full rib reinforcement. Note how added reinforcement of coupling is gained by continuous bead surrounding the coupling. This reinforcement is in addition to the strength already achieved by use of the new X-5 alloy.



X-5

New brass alloy developed to Elkhart specification is at least 25% stronger than used in former lightweight couplings.

Increased tensile strength of X-5 alloy makes coupling ideal choice for higher pressures required for expanding Dacron hose in coupling—will not deform.

Larger lugs for easier and faster hook-up.

No. X-330 X-TRUDE®

Available in 1-1/2" and 2-1/2" size

Ever on the alert for better fire fighting products . . . Elkhart's new X-Trude coupling hails one of the greatest coupling improvements we have ever announced. It's a tough, rugged, lightweight coupling made of the new X-5 brass alloy that is at least 25% stronger than that used in previous lightweight couplings. Plus the added strength of this exclusive new alloy we have further strengthened the coupling by the continuous reinforcing bead that surrounds both the male and female tailpiece. The coupling also features Higbee cut non-cross threads and indicator slot on Slidewell or rocker type lugs. *Now available for immediate shipment.*

ELKHART BRASS MFG. CO., Inc., Elkhart, Ind.

More than half a century of fire fighting progress

Trainees using Rockwood Double Strength FOAM liquid learn one of the most effective fire-fighting techniques ever developed. Training cost is low because 3 gallons of FOAM provide 1,000 gallons of extinguisher.

Training men with Rockwood FOAM costs you least, saves you most

Rockwood Double Strength FOAM liquid gives you more efficient fire protection at lower cost than any other fire extinguishing agent. By mixing only 3 gallons of FOAM liquid with 97 gallons of water and 900 gallons of air you get 1,000 gallons of a powerful fire-fighting mixture — *the cost of which, per gallon, is only three tenths of 1% of the cost of FOAM.*

Double Strength FOAM liquid helps you improve and economize your departmental training too. The very small proportion required to produce this extinguishing agent permits training under actual fire conditions at negligible cost.

For further facts on Rockwood Double Strength FOAM, tested and listed by Underwriters' Laboratories, Inc., send coupon today.

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of The Gamewell Company • A Subsidiary of E. W. Bliss Company

Engineers Water... to Cut Fire Losses

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CUT HOSE INVENTORY IN HALF...

WITH NEW *Porter*® D-J BONDED FIRE HOSE

IT STORES WET...NO RESERVES NEEDED FOR DRYING!

Think of the dollars you can save in hose requirements . . . think of the labor and drying facilities you can save with new Porter polyester, double-jacket, bonded hose. The polyester jacket defies mildew and rot so the hose can be repacked back in the truck wet, ready for immediate use. This eliminates depot trips for dry hose, cuts out-of-service time to a minimum and most important, reduces your hose inventory more than half.

Polyester is tough, too . . . lasts many times longer than ordinary double-jacket hose under the most severe usage.

Porter DJ Bonded hose is lighter in weight . . . more compact . . . takes 30% less space, so many more sections can be packed in a truck.

So, start switching over to Porter Bonded, Double-jacket Hose . . . the hose that does the job better, handles easier, lasts longer, with half the inventory. Get all the facts from your Thermoid Division distributor or write *Thermoid Division, H. K. Porter Company, Inc., 200 Whitehead Road, Trenton 6, N.J.*

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PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire rope and strand.

POWHATAN
"Speeds Up"
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The
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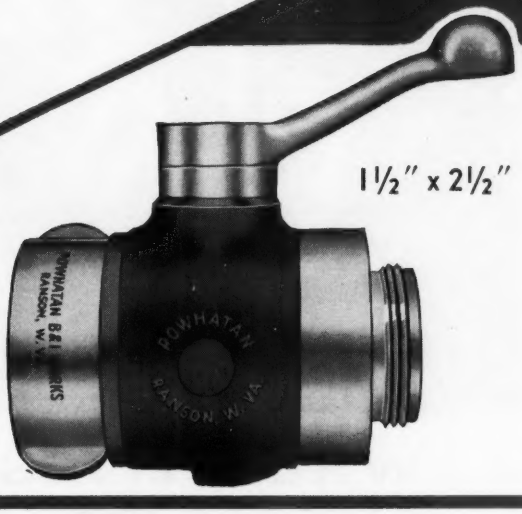
Quarter turn insures full flow, through straight waterway, under any pressure. Rugged for hard fire service.

1½" x 2½"



2½" x 1½" x 1½"

The
"BALL TYPE" SIAMESE

Both types come with either Pin Lug or "Sensible Lug" Swivel. Body painted red—polished bronze or chromium plated trim.

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RANSON, WEST VIRGINIA
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WHEN LIVES ARE AT STAKE...

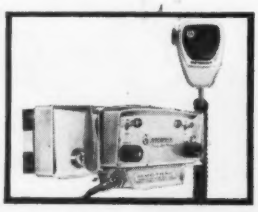
MOTOROLA RADIO RELIABILITY IS VITAL!

When the chips are down, your department can afford only the best communications. Property and lives may well depend upon your speed and efficiency . . . making sure that every man does his job . . . right now! The answer: Motorola radio communications.

Whatever your needs—mobile radio, portable radiophone, pocket radio—there is a Motorola radio that exactly fits your needs in the station, on the move, or at the fire.

You're in good hands with Motorola. Want proof? More than 3 out of every 4 fire departments choose Motorola. Why? They have found it does the job better, works longer, and therefore, costs less.

Get the full details from your Motorola representative.



A MOTOROLA RADIO FOR EVERY NEED

"MOTRAC" radio—for communications between vehicles and headquarters. Transistorized receiver and power supply for maximum reliability, economy standby operation on a trickle of current . . . operates with any 6 or 12 volt system.

"HANDIE-TALKIE" portable radiophone—for firemen on foot. Extensively transistorized, rugged, high power, low weight.

VHF POCKET receiver and transmitter—fits pocket or belt. Frees hands. Fully transistorized, 12 ounce receiver.

MOTOROLA 2-WAY FIRE RADIO

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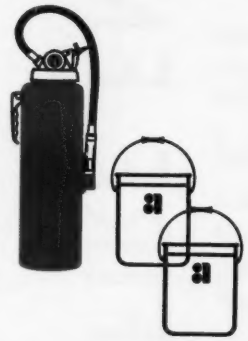
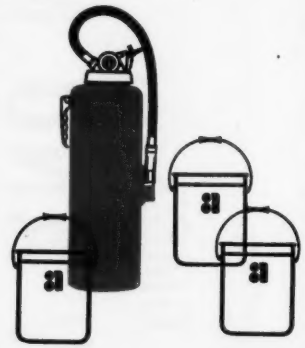
FIRST DEAL: *With your purchase*

FIRST DEAL: *With your purchase of every Ansul Sentry 10 at the regular price of $66.00 we will give you FREE one 50 lb. pail of Ansul "Plus-Fifty B" Dry Chemical.*

SECOND DEAL: *Each Ansul Sentry 20 that you purchase at the regular price of $81.00 entitles you to two FREE 50 lb. pails of Ansul "Plus-Fifty B" Dry Chemical.*



THIRD DEAL: *Three FREE 50 lb. pails of Ansul "Plus-Fifty B" Dry Chemical will be included with each Ansul Sentry 30 that you buy at $99.00.*



DEAL: Because ANSUL wants to acquaint you with the remarkable, advanced features of its new SENTRY Dry Chemical Stored Pressure Fire Extinguishers . . . because training for your people on real fires is an essential part of an effective fire protection program . . . we've arranged a special, combination deal. Between now and October 1, 1960 when you buy Ansul SENTRY fire extinguishers we will give you FREE our special "training package"—liberal extra quantities of Ansul "Plus-Fifty B" Dry Chemical which you can use in your own fire training program. With each SENTRY 10 we'll give you one 50 lb. pail of "Plus-Fifty B" Dry Chemical; with each SENTRY 20, two 50 lb. pails; and with every SENTRY 30, three 50 lb. pails. Each combination is yours for the price of the extinguisher alone. You can take advantage of any or all of these combination offers, as often as you wish, between now and October 1. To do so, call your local Ansul Man (he's listed in the "Yellow Pages") or write directly to ANSUL CHEMICAL COMPANY, Marinette, Wisconsin.

ANSUL

Here are GMC's NEW AND MOST POWERFUL FIRE ENGINES!

New GMC Twin-Six

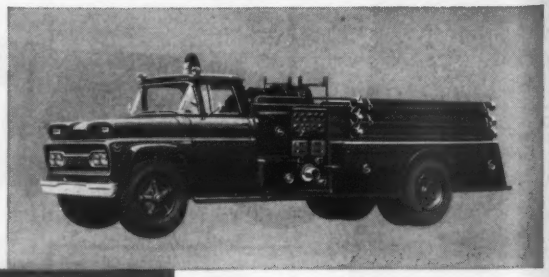
Most powerful standard production gas engines built! Full 299 hp! Plenty of power for pumping up to 1500 gallons per minute . . . plenty of reserve power for fast take-offs and reduced shifting!

V-6

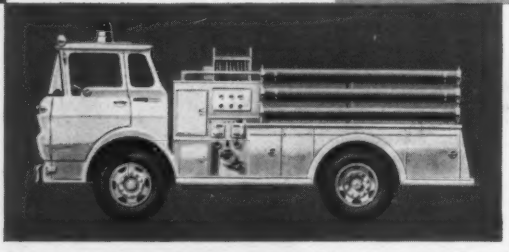
New, exclusive, extended-life V-6 engines—only from GMC! Fast starting, new GMC V-6s give you top usable power at low engine speed for responsive acceleration and dependable, high performance.

GMC
GENERAL MOTORS CORPORATION
TRUCKS

New GMC Conventionals have independent front suspension and wider track for easier and safer handling, smoother ride. Cabs are up to 10" lower outside, yet roomier inside.



GMC V-6 and Twin-Six engines meet all the power requirements for 500 to 1500 gallons per minute . . . Conventional, Conventional Ninety-Inchers and Steel Tilt-Cabs.



New short-turning GMC Steel Tilt-Cabs have the biggest safety vision you can get. Low, wide doors provide for quick entry and exit. Full tilt for 100% engine accessibility.

GMC Truck & Coach—a General Motors Division—Pontiac, Michigan

Multi-woven means a one-piece jacket

Cutaway shows exclusive multi-woven one-piece jacket. This can be woven only on Eureka's unique ultra-precision looms.
Cross section shows how the Eureka-designed loom weaves extra cords back and forth, binding all plies together.

EUREKA
Super Paragon®
100% Dacron

The Eureka® Multi-Woven 100% Dacron Super Paragon does not use a cover to reinforce a cover. It doesn't need to because the exclusive multi-woven construction invented and perfected by Eureka makes this the strongest hose on the market without the use of "crutches." (600 lbs. test pressure.)

When you try to make a hose strong by building up a layer upon layer of jacket, you set up abrasion and you kink the hose. When the rubber tube breaks down under this treatment, as it must, it is difficult, if not impossible, to locate the rupture because water pours between the jackets. Eureka Multi-Woven has one, and only one, jacket.

Eureka is the hose that cannot be matched—it never lets you down. One sure way to get the dependability enjoyed by those cities which use Eureka is to give your order to your Eureka agent right away for the unique Eureka Multi-Woven 100% Dacron Super Paragon.

EUREKA

"For greater protection to life and property

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

1 Market Street • Passaic, New Jersey *Division of* **United States Rubber**

How many lessons do we need?

Smoke floats across a schoolroom floor. A child screams, stumbles and falls into a doorway. Hysteria fills the hallways. Trampled bodies jam the exits. The fire's a roaring demon now consuming . . . consuming . . . consuming.

The story is not new. It happens in cities throughout our country . . . and each time it happens the public is shaken from its apathy. We are suddenly aware because the statistics are children now. But for how long will we be aware? The ugly truth is — an aroused citizenry is not aroused for long. And again tragedy waits for its opportunity — *our own short memories.*

How many lessons must we learn? 12,000 people died last year in fires — 2100 were children. Yes, these are "statistics". But each was a "loved one" to someone. *And the real tragedy is — all of the lives could have been saved.* Here's something you can do to prevent such needless tragedies . . .

Have your Fire Chief, or School Board Official contact a Gamewell engineer. He is a highly trained expert in fire detection who can give you information and examples of fire alarm installations. And he will survey your buildings at no obligation to you.

He is backed by the largest plant in the world engaged exclusively in the manufacture of fire and other emergency signaling systems and equipment. Have your official call the nearest Gamewell Office — we will gladly accept the charges.

The Gamewell Company
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BLISS Gamewell

FIRST...WHEN SECONDS COUNT

FIRE
ENGINEERING
VOL. 113, NO. 9 SEPTEMBER, 1960
THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

Tribute To Fire Fighters

Statistics currently available indicate there are more than 22,000 fire departments presently organized to protect the lives and property of the 180 million people in this country. The size and importance of this vast force are sometimes lost sight of in the rush of our everyday life for it is typical of human nature to overlook the familiar and commonplace and thrill to the sometimes more spectacular but frequently less important phases of our environment.

A review of the magnitude of our fire protection forces may be astounding to the general public, as well as to many members of the fire service. For example, the most reliable information available indicates that some 90,000 motor vehicles are employed by the various fire departments. The dollar value represented by this apparatus alone is well over $1 billion and the replacement cost might well represent 150 per cent of this total as a minimum.

Recent surveys show that at least 88 million feet of fire hose is stocked by fire departments with an inventory value well above $100 million, not including the cost of producing and finishing the estimated 10 million pounds of brass represented by the couplings required to connect this hose. Add to all this the multitude of nozzles, ladders, tools, fittings and other emergency equipment required to carry out fire protection functions, and the needs of the service are more clearly focussed.

Much of the materials previously mentioned are truly specialized products and it requires that an important segment of American industry be devoted to supplying the needs. Thousands of skilled engineers and craftsmen are necessary to meet the demand created by this constantly expanding market with a positive effect on our national economy.

In addition, the requirements for personal safety articles to protect the lives and well being of the fire fighters must not be overlooked. Helmets, turnout and other protective clothing, boots, gloves, breathing apparatus and the like are manufactured by many safety specialists and general trade organizations to fill these needs. Added to this must be uniform and work clothing and similar items of apparel required by the fire personnel.

Not to be forgotten are the great numbers of buildings required to house the apparatus and equipment, plus the manpower necessary to operate them. The services necessary for the maintenance of these structures are no small item, nor is the dollar cost of the salaries for the more than 100,000 professional fire fighters presently employed. No one can accurately estimate what the service of over one million volunteer firemen are worth, but the cost of compensation insurance and other protective benefits necessary to maintain such a force is a major factor in this area of business.

When all this is contemplated, it can be seen that our fire protective effort is in the multibillion-dollar class and its indirect effect is felt in every segment of our business and social life. In the past there has been a tendency on the part of some people to slight the contribution of the fire fighter to our national welfare because it cannot be measured in terms of production. As the few points enumerated here are considered it can be seen that on the contrary, the fire service is definitely a cause for production, yet its greatest contribution is to the protection of the people and facilities necessary to our way of life.

During the forthcoming Fire Prevention Week stress will be placed on fire safety for the general public. It would be desirable if during this period much of the data previously recorded here could be made known to the people who willingly support the fire protection forces. It might better acquaint them with the scope of the fire service and its effect on their welfare in a manner unsuspected by them.

At the same time it would be fitting if some tribute were accorded the men who stand ready at all times to safeguard the people, sometimes at the cost of their own lives. The fire service is in the front line of the war on human carelessness responsible for a majority of all fires. At the same time it is the sole source of shock troops when educational efforts fail.

Hon O'Brien

Many schools still in use were built to burn according to present-day standards. Elimination of such structures is the only real answer to the fire safety problem

School fire safety—present and projected

By T. SEDDON DUKE*

TODAY, when anyone talks or writes about school fire safety, everything dates from the catastrophe in Our Lady of the Angels School in Chicago on December 1, 1958. This fire really shocked the country to the extent that many charged with the life safety of children took a long hard look at whether or not they were fulfilling their responsibilities. It is unfortunate that it always takes a catastrophe of gigantic proportions to make us do the things that should have been done in advance.

The Iroquois Theatre fire produced greater safety to life from fire in theatres. The Winecoff and the La-Salle hotel fires produced better conditions in hotels. The Cocoanut Grove Night Club fire called attention to places of assembly, revolving doors, and other such hazards and therefore all places of assembly were bettered from a safety-to-life standpoint. The nursing home fires in Largo, Fla., and in Warrenton, Mo., added to others, produced greater safety for those in nursing homes. The Chicago school fire certainly has produced for school-children greater life safety from fire.

So much for history . . . which is valuable only to the extent that it teaches and in this manner may prevent the making of the same mistakes in the same generation. It would be our recommendation for those of you who have children in school, that you take a look at where they go to school. There is no better place to start your interest in school fire safety than to find out whether or not your own children are safe.

Immediate evacuation necessary

The first thought in any school fire should be the immediate evacuation of the children. This is a job for trained adults in the school system and the responsibilities should be clearly defined. You frequently read or hear where some fire official makes a statement that had the fire department received an immediate alarm, lives could have been saved. We all know that a delayed alarm is of serious consequence in any case, but this writer believes fire officials are putting an unfair burden on themselves by such statements. A fire detection system can be installed covering an entire school. This system can actuate the school alarm system and in turn, even notify the fire department, but it is not going to answer four critical questions, namely, the distance from the firehouse to the burning school, the

Combustible interior finish and crowded conditions mark practically all outmoded schools. Emergency protection measures can alleviate some hazards but cannot completely compensate for basic weakness

* President, Star Sprinkler Corp.; chairman, board of directors, National Fire Protection Association.

Hazards of overcrowded and makeshift classrooms can only be overcome by new construction. Sound fire protection engineering is a must to lessen risk to pupils' lives

Modern structures can be deadly traps unless careful attention is paid to sound fire protection engineering details at blueprint stage. Checking plans with competent authorities is a necessary procedure. Rural areas may also require serious consideration of water supply problem for fire fighting

traffic conditions, the weather conditions and the gamble that the fire apparatus is always in the firehouse. You can look through a window and see a fire, but someone must put it out.

Not long ago the National Fire Protection Association conducted a survey to indicate what had been accomplished in the year following December 1, 1958. It was found that in most cases, a sincere attempt had been made to plug the loopholes, but it was also indicated that much remains to be done.

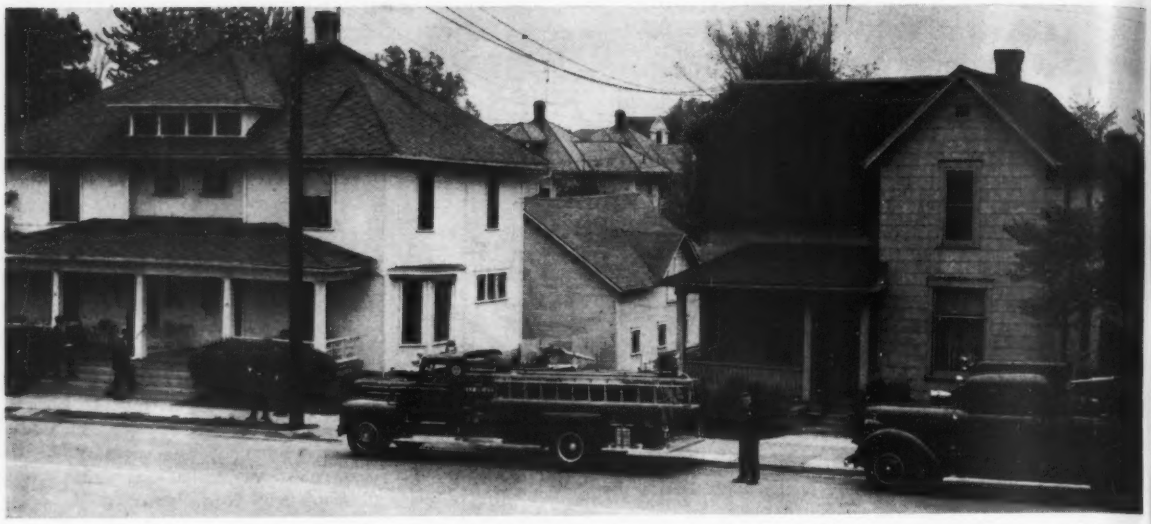
A brief summary and comments on the survey of the school fire safety situation would seem to be in order. At that time, 4,500,000 more American children were housed in public schools where their lives were safer from fire than on December 1, 1958. Another 9,700,000 children attended public schools in which some of the life hazards have been reduced. In that year, nearly 53,000 public school buildings across the nation corrected major or minor conditions considered fire hazards. It is estimated that there are now 63,500 public schools in the United States which meet minimum basic standards to assure adequate life safety from fire.

At the same time, in that year, no needed improvements in life safety from fire had been made in about 30,000 schools housing 8,250,000 children. In the 36,000 schools housing 9,700,000 children where some fire hazards have been corrected, conditions are still below the minimum basic standard needed to make reasonably sure that these children can escape safely in case of fire. While more than 17,000,000 public school children are being taught under reasonably fire-safe conditions, there are still about 18,000,000 children needlessly exposed to fire hazards.

We, whose principal concern is life safety from fire, are encouraged by the fact that nearly 70 per cent of the nation's communities have done something constructive about hazards in their schools. Certainly, we have a long way to go and it is appreciated that we cannot stop until the 18,000,000 public school children now inadequately protected are no longer needlessly exposed to the danger of fire.

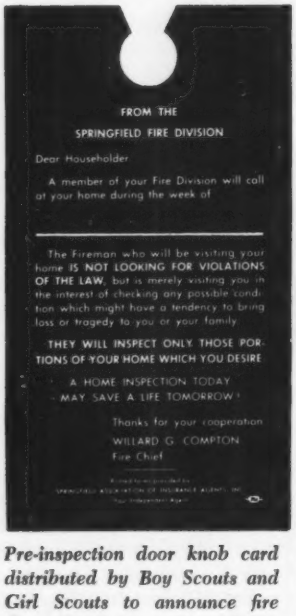
Nationally, in the 16,500 public schools which made major improvements during the year, these projects were completed. In 6,055 buildings all stairways were enclosed. In 1,075 buildings complete automatic sprink-

Continued on page 893



Apparatus of first companies to "hit the street," Engines 4 and 7, stand in middle of block as personnel cover residences

Springfield inaugurates home fire inspections



FROM THE
SPRINGFIELD FIRE DIVISION

Dear Householder

A member of your Fire Division will call at your home during the week of

_____

The Fireman who will be visiting your home IS NOT LOOKING FOR VIOLATIONS OF THE LAW, but is merely visiting you in the interest of checking any possible condition which might have a tendency to bring loss or tragedy to you or your family.

THEY WILL INSPECT ONLY THOSE PORTIONS OF YOUR HOME WHICH YOU DESIRE

A HOME INSPECTION TODAY
MAY SAVE A LIFE TOMORROW!

Thanks for your cooperation
WILLARD G. COMPTON
Fire Chief

Pre-inspection door knob card distributed by Boy Scouts and Girl Scouts to announce fire department tour of neighborhood

Inspection form (right) is marked by firemen and given to homeowner

HOME INSPECTION PROGRAM SPRINGFIELD FIRE DIVISION

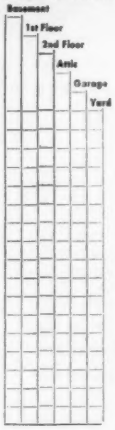
Home Inspection at_____

Dear Householder:

With your consent, the undersigned fireman has made a fire-safety inspection of your home. He has checked below those conditions that might start a fire and has left instructions on how to correct these fire hazards. YOU ARE URGED TO CORRECT THEM AT ONCE — Please do not put it off. If you wish to discuss any hazards, please call the Fire Department — FA 3-4646.

WILLARD G. COMPTON, Chief

_____, 19____



( ) Not at home.

( ) Refused inspection.

1. Rubbish and trash accumulations.
2. Doors to basement and bedrooms missing.
3. Flammable liquids improperly stored.
4. Painting materials, oily rags unsafe.
5. Storage or work areas congested.
6. Combustibles too near heating device.
7. Defective chimneys, smokepipes, flues.
8. Evidence of careless smoking habits.
9. Gas appliances unvented.
10. Electrical circuits overloaded.
11. Improper fuses.
12. Excessive extension cords.
13. Defective wiring.
14. Outbuildings and yard clean up needed.
15. Building maintenance, plaster off, etc.
16. Unsafe rubbish burning.
17. Gas leaks or odors.

Remarks_____

HAVE YOU EVER CONDUCTED A HOME FIRE DRILL FOR YOUR CHILDREN?
YES_____ NO_____

CAUTION
NEVER LEAVE YOUR CHILDREN UNATTENDED FOR ANY REASON

_____
Fireman — Inspector

Printed forms provided by
SPRINGFIELD ASSOCIATION OF INSURANCE AGENTS, INC.
"Your Independent Agent"

INFORMATION CONCERNING ITEMS ON THE HOME INSPECTION BLANKS

1. RUBBISH AND TRASH ACCUMULATIONS

Rubbish and trash serve no useful purpose and since they are flammable, should never be piled too close to heating devices. Newspapers and magazines will be the prime offenders and will be found in basements, attics and other storage areas. Trash and rubbish should be kept in metal containers when possible and disposed of at least once a week. Attics should not be a storage place for trash, rubbish and discarded furniture. Boxes, crates and old lumber will be found in the homes of the do-it-yourselfers. These materials should be kept in order; neat piles or boxes away from heat source.

2. DOORS TO BEDROOM AND BASEMENT MISSING

Doors at the head of the basement stairs and bedrooms should fit tightly and be kept closed whenever possible. Explain that this will stop the spread of fire and possibly save their lives at night.

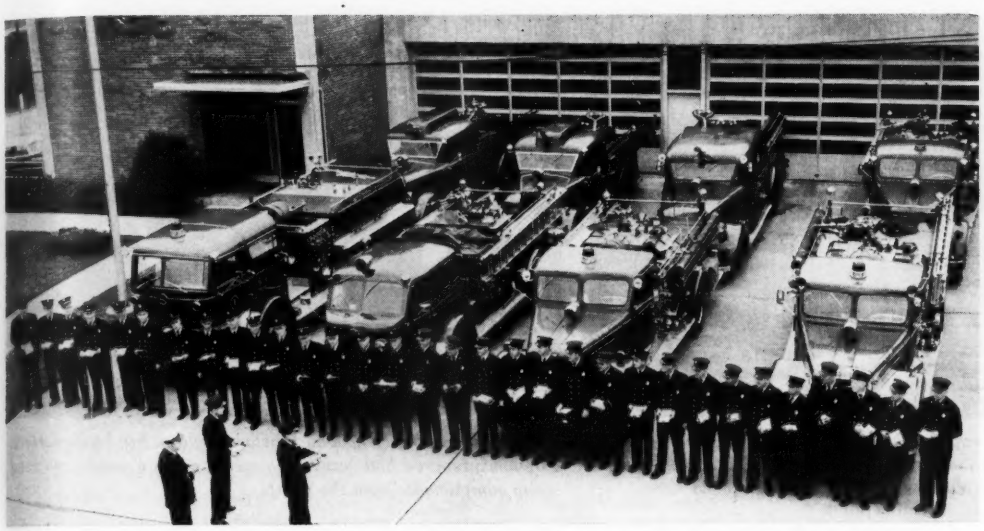
3. FLAMMABLE LIQUIDS IMPROPERLY STORED

Flammable liquids should not be stored in or under stairways or in glass or earthen containers. Look for evidence of flammable liquids being used to start coal fires or fires in fireplaces. Discourage the use of flammable liquids for dry cleaning purposes. Storage of gasoline for power motors should be stored outside of the house and should not be excessive and stored only in safety containers.

4. PAINTING MATERIALS, OILY RAGS, ETC.

Discourage the storage of large amounts of partially used cans of paints. Paint should not be stored too close to heating devices. Look for paint brushes being soaked in flammable liquids. Recommend the use of non-flammable commercial cleaners. Paint soaked rags and wiping cloths should be stored in metal containers with lids or discarded outside of house. Paint thinners and solvents

Inspector's check list corresponding to home inspection form is given to each fireman. Each item contains instructions for use by fire fighter-inspector



Final instructions are given to companies at headquarters before inaugurating inspections on May 16

By **CHIEF WILLARD G. COMPTON**

DURING MAY 1960, the Springfield, Ohio, Fire Department began a home fire inspection program designed to cut residential fires by 40 or more per cent. The program stems from an analysis of fire reports for previous years which show that 59 per cent of the alarms answered by the fire department were from residences and were caused by electrical defects, rubbish, careless smoking or use of matches and faulty stoves or furnaces.

Before inaugurating the program as much information as possible was obtained from the National Board of Fire Underwriters and the International Association of Fire Chiefs. The services of Jay W. Stevens, director of fire prevention, IAFC, were secured for a "kick-off" luncheon.

Perhaps the most important aspect of such a campaign is the planning and publicity. A general meeting of chief officers was held to discuss the feasibility of such a program and the beneficial results which could be obtained. It was agreed that the need for home inspections existed and all chiefs enthusiastically promised their full support.

We then picked one double company and described the program in detail. We were emphatic regarding the type of inspections which would be required, the length of time, and the men involved. From the reaction of these men we decided that the program could be successfully accomplished and had no fear as to the acceptance and cooperation of all the fire force.

The fire prevention bureau, consisting of one platoon chief and two firemen, was then contacted and instructed to present some type of plan. Using reams of data previously collected, we started working out a program. Had it not been for the information we had collected from other cities, we probably could not have accomplished so much in so little time.

The project required some additional funds for printing, etc., and the writer contacted the city manager and informed him of our plan. The plan was approved, but no monies existed for the necessary expenses. Not to be deterred, the Springfield Insurance Agents Association was contacted for the necessary funds ($600.00). The Insurance Agents were happy to furnish the money for such a worthwhile project and encouraged us to proceed as planned.

Realizing that the project could not succeed without proper publicity, the Springfield Area Chamber of Commerce and the local newspapers were contacted. Their support was pledged without hestitation and in addition, many practical suggestions were offered and accepted. Proceeding on the theory of proper publicity as our best salesman, we planned for a kick-off luncheon at central engine house, April 27, approximately three weeks before the actual start of the inspection program. Invitations were issued to the press, radio, Boy and Girl Scout executives, PTA chairman, presidents of all public and parochial clubs, president of the Chamber of Commerce, president of the League of Women Voters, Ohio Edison, Ohio Fuel Gas Co., president of the Ministerial Society, Springfield's mayor and city commissioners. This entailed approximately 48 people including the chiefs. Having no funds for this project, we called upon more friends and received cash, groceries and hams. The meal was prepared and served by the firemen, and 98 per cent of those invited attended.

The invitation stated that the meal would be typical fire station fare and the women attending were given the choice of being picked up and returned home in a fire car. We found this proposal appealed to the ladies.

Continued on following page

Classroom discussion of campaign in quarters of Engine Co. No. 1. The drillmaster, all platoon chiefs and company commanders held school on subject to insure that all personnel understood objectives and tactics to be employed

The author (right) explains home inspection program to Springfield Mayor E. A. Patmos (left) and Mrs. Leonard Hamilton, president of PTA as Jay Stevens looks on

Jay Stevens addresses kick-off luncheon held at fire headquarters. Firemen prepared and served the meal and as a result, received many compliments from the guests

Continued from previous page

In an effort to save time and get our guests back on the job, the program was explained to them while they dined. The PTA was requested to see that a copy of a form letter given to them was placed in every school in the city; members of the Ministerial Society were requested to read the letter or print it in their church bulletins; the service clubs were asked to make arrangements for a three-minute speaker from the fire division; the Chamber of Commerce was requested to contact their members and also ask for pay envelope stuffers in the various factories and stores, plus notices on the bulletin boards. The mayor and commission were asked to pass a resolution endorsing the home inspection program. The Boy and Girl Scouts were requested to take charge of the door knob hangers each Saturday in advance of the inspection in that district. The newspapers and radio stations were asked to carry the entire story, day by day, plus spot announcements. The entire dinner lasted for an hour and five minutes and we are happy to report that not one group turned us down or failed to do their assigned tasks.

Following the luncheon, we had another meeting with the chiefs and the fire prevention bureau, and discussed the proper procedure. The following material was used and a copy given to each fireman in a general meeting of each unit. Our drillmaster spent three hours going over the material with the men, and in addition, each officer held at least two sessions within the company.

Instructions to personnel

It should be understood that this inspection campaign is a fire department effort to reduce the number of home fires and attendant loss of life by pointing out the fire hazards which are common to every home, and to encourage the householder to eliminate these hazards.

1. Inspections will be conducted on an in-service basis during the hours of 9:15 a.m. to 11:30 a.m. and 1:00 p.m. to 4:00 p.m. There will be no inspections on rainy days or anytime the streets are wet. The period between 8:00 a.m. and 9:15 a.m. has been reserved for cleaning of apparatus as usual. We do not wish to get into an extended period of time when the apparatus will not be cleaned. Even if a company is reduced to two men, one man will inspect. We feel that this inspection program will be completed in three months or less. Mercantile and industrial inspections will be taken care of by the inspection bureau insofar as possible.

2. Inspection uniforms should be clean and neat. Always approach the dwelling on the sidewalk. Make every effort to leave the front door open. The weather undoubtedly will be moderate and this should create no problem.

3. Previous notice to occupants will be given by scouts leaving a card on the door knobs.

4. Apparatus should be parked in the middle of the block being inspected. One man will stay with the truck and the radio will be left on at all times. As inspectors progress toward the middle of the block, apparatus should then be moved to the end of the block. Watch out for children when moving apparatus. When alarm is received over radio, inspectors should be alerted to return to apparatus by blowing the siren.

5. The man left with the apparatus should keep a constant check to see if motors are overheating.

6. There will be one inspector to a home. Always ask permission to make the inspection. Explain in a friendly manner that the sole purpose of making an inspection is to point out the hazards which may endanger their lives and property. Place particular stress on the fact that we are not looking for violations, merely attempting to reduce loss of life in the home by eliminating hazards. If permission to inspect is refused, thank them in a courteous manner and leave.

7. Remember that this is a fire department effort and you will be in fire department uniform; therefore, you will be expected to conduct yourself as a gentleman.

8. Compliment every householder regardless of what you find. You might compliment them on their fine children, their new paint job, beautiful television, furniture, etc., or even their nice garden.

Scoreboard of home fires is displayed on esplanade of downtown Springfield. Scores are posted monthly and keyed by color—red for increase in home fires; green for decrease

SPRINGFIELD FIRE DIVISION
CITY OF SPRINGFIELD, OHIO

WEEKLY HOME INSPECTION REPORT

CO. NO._____ UNIT NO._____ MONTH_____, 19____

No. of homes contacted	
Not at home	
Refused Inspection	
No. of Homes Inspections	

RECOMMENDATIONS

1. Rubbish and trash accumulations	
2. Doors to basements and bedrooms missing	
3. Flammable liquids improperly stored	
4. Painting materials, oily rags unsafe	
5. Storage or work areas congested	
6. Combustibles too near heating devices	
7. Defective chimneys, smokepipes, flues	
8. Evidence of careless smoking habits	
9. Gas appliances unvented	
10. Electrical circuit overloaded	
11. Improper fuses	
12. Excessive extension cords	
13. Defective wiring	
14. Outbuildings and yards clean-up needed	
15. Building maintenance, plaster off, etc.	
16. Unsafe rubbish burning	
17. Gas leaks or odors	
TOTAL RECOMMENDATIONS	

Remarks _____

SUBMITTED BY _____

Company weekly summary form provides quick statistical information of area hazards as well as tabulation of inspections

9. Be wary of long-winded conversations. Keep walking and dominate the conversation. Do not stray from inspection conversation. Discussing friends, relatives, the weather and taxes can defeat your whole purpose.

10. Save all pennies and bad fuses for the fire prevention bureau. These will be an integral part of our publicity campaign.

11. Only inspect portion of home they wish inspected.

12. Inspection territories will remain as usual. Do not change at end of month. Keep territory each unit starts with until completed.

13. Pump and ladder will work as one unit with one operator for both pieces with motor on extra truck not running. Keep both units together.

14. Mark check-off sheet with neat X.

15. Enter the street address on the form before knocking on the door or introducing yourself.

16. Remember that the original (white) copy is to be left at the home and you are to write a form for every residential address on your route, even though there is no one at home. You will note that there is no provision for the name of the householder—names are not necessary or desirable to this campaign.

17. If there is no one at home, check (X) "Not at Home," sign your name and company number, and leave the original (white) copy at the door. Do not use the mail box.

18. When hazards are found, do not order corrections made, but explain the hazard, its potential danger, and the proper method of correction. After this is done, check the hazard on your inspection form for that address using the space for "remarks" whenever necessary.

19. When you notice something that is not listed on inspection form, write it in "Remarks"—such as hazardous roof, shavings around work area, etc.

20. If you are refused admittance, be sure to thank the people courteously as you leave. Do not (X) the refusal on your inspection form in the presence of the home owner. They should not be made to feel that they are being listed as objectors to this program. Do not leave the white copy in this case.

21. Inspect only basements, utility rooms, storage rooms, kitchens, garages and yards. Other rooms in the home may be inspected at the request of the householder but never at your suggestion. Rubbish or junk in the yard should be checked on your inspection form and be accompanied by an appropriate comment under "Remarks."

22. At the end of each day the captain or lieutenant will summarize your carbon (yellow) copies and forward the summarized report weekly to the fire prevention bureau.

23. Don't forget—write your name and company number plainly on every form you leave at a home.

Radio test instructions

While on dwelling inspection, you will have to rely on radio entirely for alarms received while out of quarters.

KQD will broadcast each day at 10:00 a.m., 11:00 a.m., 2:00 p.m. and 3:00 p.m., so that you may know you are receiving wherever you might be.

Be sure you receive these stated broadcasts.

Do not acknowledge these broadcasts if they are received o.k.

If they do not come through at stated times, call for a test.

If you cannot get KQD 687 on your radio, assemble your men and go back to quarters immediately.

In case of alarm, only responding companies will acknowledge.

The first four weeks revealed the following: 6,715 inspections, 555 refusals, 92 gas leaks, 4,055 not at home or refused to answer the door. Several hundred people who were not at home when the fire department called, have since telephoned the inspection bureau and requested inspection at a particular time or date. These "specials" are being taken care of by the fire prevention bureau.

The newspapers cooperated 100 per cent and practically all articles and news items appeared as front-page material. In addition to the numerous radio broadcasts from the two local stations, the TV stations of Dayton and Columbus carried movies on various phases of the campaign.

As for the results—it is too soon to tell, but our home fires did drop from 31 in April to 19 in May, which was

Continued on page 891

Teaching fire prevention in the elementary schools

Riverside Fire Department conducts month-long program to indoctrinate pupils in principles of fire safety

By BOB HOLMES

The department's program includes lectures and demonstrations to junior high school chemistry classes. What causes fire, and what puts it out are the highlights hit here

FIRE PREVENTION WEEK in Riverside, Calif., has had to be stretched to Fire Prevention Month to take care of the fire department's dramatic six-year program for all elementary school youngsters. Every child's awe of fire, firemen and fire equipment is put to good use in the department's program to teach them a different phase of fire fighting and safety each year during their stay in elementary school. Actual demonstrations of fires with trucks and equipment in operation; treatment of victims; demonstrations of how easily clothing catches fire and how to extinguish such fires; methods of reporting a fire; movies and talks by firemen—all are done by the city's firemen in Riverside's 30 public and private elementary schools. Recently the program has been expanded to include demonstrations in junior high chemistry and homemaking classes.

The program hasn't eliminated fires caused by children playing with matches. In Riverside—with 100 per cent population growth in the past 10 years—that's not likely. But in the past four years, the number of such fires has remained constant despite continually increasing population.

"Each year's program is a complete unit in itself, and not necessarily a continued story," explains Fire Chief Burney Montgomery, who helped set up the program. "It is reasoned that a youngster progressing through school will see six different programs, and yet the newcomer getting in at the third or fourth year won't be lost."

Conducted during October

In a particular year, the same program is shown to all pupils in all grades. Next year it's the next program in the six-year series. It's all done during October, the Fire Prevention Month in Riverside, which many years ago began its fire prevention effort in the schools. But, like many programs even today, it consisted only of an annual lecture by the fire marshal.

However the brief, hard-hitting series started 12 years ago emphasizes action and demonstrations. Talk is tied in with action. "The schools' audio-visual department taught us that the best way to put over a lesson is to make it interesting," explains Battalion Chief Charles Brague, who organized the program 12 years ago and whose fire prevention division handles it. "We have tried to make it interesting by use of department trucks and equipment. And an obvious by-product is the excellent opportunity to sell the department to the youngsters, and through them, the community."

The program now has completed two six-year cycles. It is always subject to change. The original second-year phase dealing with use of hand extinguishers was eliminated after it was decided children of elementary school age would not likely use them.

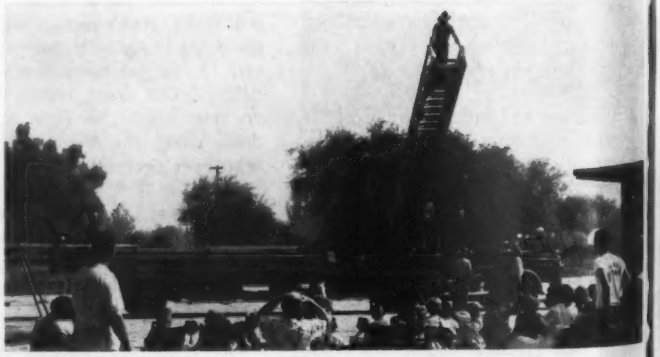
Meeting with school principals

Soon after the school year starts in September, the fire prevention division representatives attend a joint meeting of the city's elementary school principals, to schedule times, give out tips and hear suggestions. One man of the division is in charge of the series, but the other three division men know it thoroughly and can step in to put on any phase. Aerial truck and engine crews put on the demonstrations.

"One of the main things we've learned is that we had to talk slowly and distinctly, in a child's language. You can use adult words, just as long as you explain them right after using them," Brague says. The first year's program is held in school auditoriums, or when they aren't available, on the school grounds (Riverside's climate makes this no problem, even in late October). The main emphasis the first year is on how to turn in a fire alarm. Three methods are discussed:

1. Use of the telephone;
2. Use of the telegraph alarm box;
3. Verbally telling someone when no phone or box is available.

The demonstration includes a mounted portable board that has a telephone and a complete municipal alarm box, punch register and bell on it. The fireman explains what happens when a box is pulled, he pulls it, and



Children in a school for the physically handicapped watch as fireman starts his ride upward on the 85-foot aerial—All photos Riverside F. D.

the children see the register work and the bell clang out the box number. This method is used to bring trucks to the school for demonstrations, as well. Strong emphasis is placed on the seriousness of turning in false alarms.

The second program in the series is held on the school grounds. A brief review is given on how to turn in an alarm, and this is hit again each succeeding year. Before the demonstration is started, two long narrow pans are placed in a shallow V, with enough room at the point to walk between. The pans are partly filled with water, an oil-gasoline mixture poured on the water and lighted. The fireman lighting the fire then walks back of the fire and collapses to simulate an injured man overcome by smoke. The mounted alarm board is then used to summon a truck from a nearby station. The truck arrives, hose streams are

Fire Chief Montgomery explains to students how to phone in a fire alarm. Portable board enables youngsters to see and hear what happens in the fire station when an alarm is pulled

used to part the flames so that a rescue team can go through and bring out the injured man. He is then "revived" by use of the resuscitator.

During the action a fireman keeps up a running commentary over the portable loudspeaker, explaining what is taking place and that the whole affair is just play, that no one is actually hurt. Strong emphasis is made that these are things that should only be done by firemen, whose job it is.

Brague says, "When we originally set the program up, we wanted to confine it to the fourth, fifth and sixth grades. But the schools insisted on all grades. The kindergarten-through-third grades brought in the particular problem of making sure the children understood it was all a show, like a movie, and that no one was really getting hurt or burned. Now, the teachers prepare the children in advance, explaining that it is just a demonstration."

The third program in the series is held either in auditorium or on the playgrounds. Emphasis is on the good match and the bad match, on playing with matches and the flammability of clothing. Stress is on the good and the harm a match can do. "We also tell them reasons why they should obey parents and teachers when they warn about matches. We point out why children have no need to carry or use matches," Brague says. Clothing dummies are used and cotton clothing ignited to show how quickly it burns. The children also see how a blanket thrown over a burning dummy puts out the flame, and why not to run when clothing catches fire. When demonstrations of cloth burning can't be made, a film showing the same thing is substituted.

In the fourth year, the turning in of an alarm and the match problem is reviewed. Then in the school yard the children see the department's 85-foot aerial truck demonstrated. The truck is brought to the yards, as are all trucks used in the demonstrations, by turning in an alarm from the portable board. Explains Brague, "When the box is sitting on the school grounds and isn't plugged in, we have someone stationed nearby in a car with a radio, and they can relay the alarm to the station."

Included in the demonstration is a fireman sliding down the rescue line from atop the ladder. They also see how an injured man can be lowered by means of such a line.

The fifth in the series is a movie, "Tony Learns About Fire." The department borrows it from the National Board of Fire Underwriters. The picture is ideal in that it is in color and reviews all that the four previous programs have hit. The movie tells the story of a youngster who goes baby-sitting, is confronted by a fire in the home, and handles the situation well. Her school makes a project of the fire problem, puts on skits, makes posters, prepares talks, etc.

The sixth and final year sees students in charge of the program, at each school. With the cooperation of the teachers, the sixth grade—or others if desired—put on a fire prevention program at the school, showing what they have learned in the previous five years. The teachers assist, but they let the students think up what they want to do, and put it together.

"In the first year of the student programs, they came up with original skits, posters, lectures, set up speaker's bureaus that went from room to room, put on puppet shows—in fact, came up with many things we of the fire service would not have thought of," Chief Montgomery says. "This program has been the highlight of the series. They had mock alarm boxes and even showed they had done considerable research on their own initiative."

The department helps by furnishing some of the props for these shows. The schools' audio-visual department insisted on retaining the sixth-year "do-it-yourself" phase after seeing the results. "They felt this was the most important part, since it showed what the pupils had learned," adds Brague.

Each year's program lasts 20 minutes, though it may have to be given over and over until all classes in a school have seen it. "Twenty minutes is about as long as you can keep them engrossed in one subject," explains Brague. Of the 20 minutes, "one half is pure education and one half is pure entertainment, but entertainment with a serious purpose," he sums up.

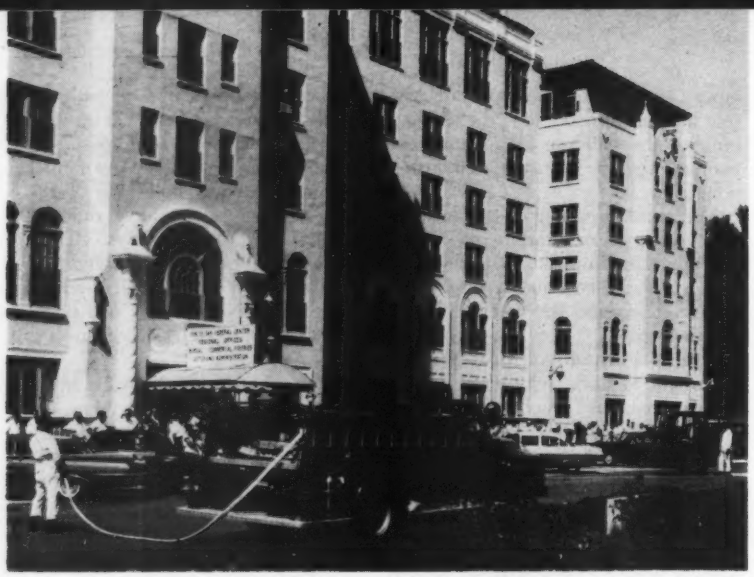
Battalion Chief Brague, Chief Montgomery, former Fire Chief Ray Allen (now retired), W. Russell Bailey, the school system's audio-visual head, and numerous others have had a hand in working out the series.

"Strong emphasis is always made that some of the things demonstrated are ones that are to be done only by firemen, who are charged with this community responsibility," Brague says.

Chemistry class demonstrations

In addition to the elementary school talks and demonstrations, the fire prevention division is now putting on programs for junior high chemistry and homemaking classes. The chemistry class demonstration deals with the nature of fire and heat, how it destroys, how it is extinguished. The homemaking programs emphasize fire hazards in the home, cooking fires, etc., and how to handle them.

Fire Department officials estimate the entire program has resulted in savings of thousands of dollars worth of property that might have been lost through children's carelessness or lack of knowledge in the past 12 years. But even more important, they stress, are the number of young lives that may have been saved. It's a program simple enough to put together, and low enough in manpower and materials requirements, that with modifications can be duplicated by almost any department. □□



St. Petersburg Beach, Fla., Fire Department cooperated with the Veterans Administration and other agencies in surprise evacuation of the Don Ce-Sar center

Our military ins

OUR VARIOUS military installations in the United States and abroad are in the forefront in promoting fire safety. While 744 municipalities in the United States and Canada submitted entries in the 1959 NFPA Fire Prevention Contest, in addition, more than half that number—458—represented military installations.

The New York Naval Shipyard, Brooklyn, N. Y., is called the "can do" yard. It deserves the appellation for its year-round fire prevention, as well as for its service to the fleet. Fire Chief Isaac Holiber stresses fire prevention all during the year and intensifies these efforts during Fire Prevention Week. The NFPA awarded the yard a commendation for its report of year-round activity entered in the 1959 fire prevention contest.

The Marine Corps Base, Camp Pendleton, Calif., over the past few years has accomplished fire prevention programs which have placed high in the NFPA contest.

The base fire prevention program is coordinated by the base fire chief, William B. Clayton, and is under the direct administration of the chief fire protection inspector, George A. Ploof, who exercises supervision over three fire protection inspectors. The program involves the inspectors in all activities of the base. In the resultant contacts, they stress good housekeeping, proper use of electrical equipment and of heating devices.

As part of observance of Fire Prevention Week, Baltimore County fire officers are briefed in fire prevention and fire fighting by Army officers assigned to Nike base at Sweet Air, Md.—*U. S. Army photograph*

Camp Pendleton Marine Corps Base, Calif., believes in repeating the lessons of fire prevention in practice as well as in this award-winning slogan

Chief Ike Holiber supervises the instruction of New York Naval Shipyard employees in the proper use of carbon dioxide extinguisher

installations lead in fire prevention

The fire inspectors assist the fire fighters in their pre-fire planning and home inspections. As a corollary to the home inspection program, the base fire department recently put across a baby-sitting program, which stressed fire and accident safety. Approximately 130 qualified schoolchildren received certificates for successful completion of the course.

As part of the observance of Fire Prevention Week, 1959, 600 employees in the Veterans Administration building at Don Ce-Sar Place, St. Petersburg Beach, Fla., evacuated the huge building in three minutes during a surprise fire drill. The St. Petersburg Beach Fire Department sent three pieces of apparatus to the scene as part of the incident. Evacuees included employees of the Veterans Administration, Census Bureau, U. S. Fish and Wildlife Service, General Services Administration and the Florida State Department of Veterans Affairs.

"Careless Workers Cemetery"

To serve as a reminder that carelessness is a major killer, a "Careless Workers Cemetery" was set up at the Raritan Arsenal, Edison, N. J., during Fire Prevention Week, 1959. Headstones carried such epitaphs as "I didn't believe in fire prevention."

In addition, a coffin was mounted on a flat-bed truck which bore a sign proclaiming "Don't Smoke in Bed—He Did." Fire Chief Fred Vaugoin conceived the idea for the float. He believed that, although it might be considered morbid, it would leave a lasting impression that fires can be fatal—and often are.

The arsenal fire department also held a series of demonstrations in the use of fire fighting apparatus, showed films, conducted special inspections and surveys and unannounced fire drills and gave lectures at local schools.

In observance of Fire Prevention Week, 1959, a Nike guided missile battery of the Baltimore defense played host to officials of three fire companies from Baltimore County.

Fire officers from the Baltimore County Paid Fire Department, and Jacksonville and Cockeysville, Md., volunteer companies were given a complete tour, with special emphasis on fire fighting and fire prevention techniques, of Battery A, 4th Missile Battalion, 1st Artillery, Sweet Air, Md.

The visitors ate in the battery mess hall and observed a fire drill complete to rescue of a "stricken" soldier from the battery day room.

Battery A is an Ajax missile unit which is part of the 17th Artillery Group. The group is responsible for protection against air attack on the Baltimore area and utilizes both the

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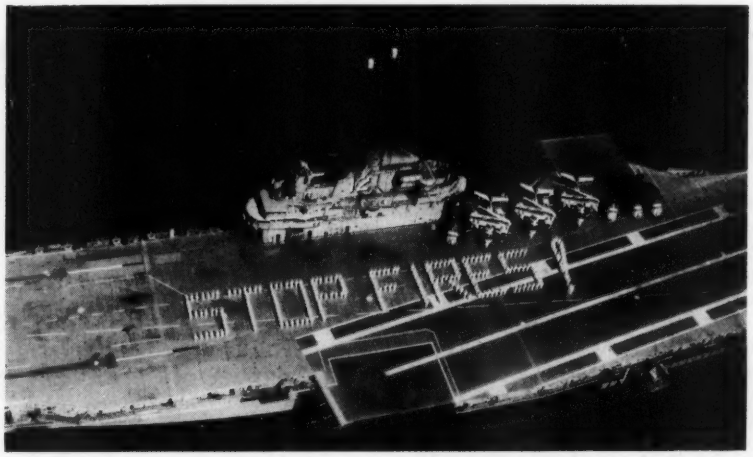
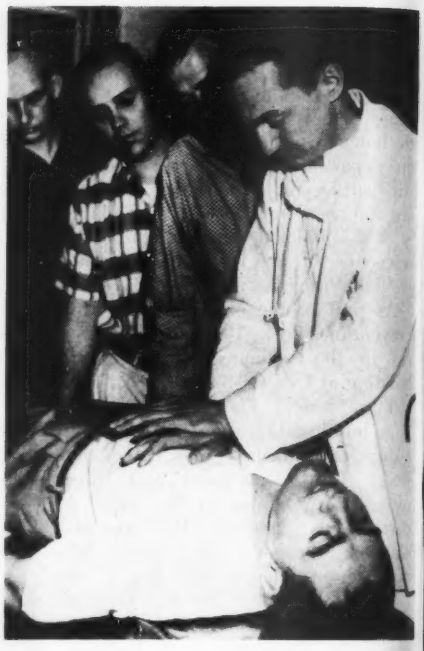


Many fire chiefs would love to enlist the services of an aircraft carrier to put across the message of fire prevention. The 14th Naval District did just that when the Hornet visited Pearl Harbor recently *—U. S. Navy photograph*

To dramatize the often fatal results of fire, employees of the Raritan Arsenal, Edison, N. J., pay their last respects to a "careless worker"

Baltimore City Fire Department notches another "first" in the first aid field

By CAPTAIN MARTIN C. McMAHON
Supervisor, Ambulance Service



Dr. James Jude demonstrates closed-chest cardiac massage on Fireman Donald Brown. Looking on (left to right) are: Firemen Melvin Santmyer, Wilbur Saulsbury and Steven Messiora

TWO PROBLEMS necessitating quick, positive action have always faced emergency ambulance and rescue squad personnel. One of these, that of stoppage of breathing, has been more or less resolved in the last few years with the perfection of mouth-to-mouth and mouth-to-airway resuscitation. Prominent in the work of pioneering these methods have been the Baltimore City Fire Department and Dr. Peter Safar, Baltimore City Hospitals, Department of Anesthesiology. The second problem, that of cardiac arrest or cardiac standstill, better known to the layman as heart failure, now seems to have been solved by a technique called closed-chest cardiac massage.

The fire department working with Dr. Alfred Blalock, chief, Department of Surgery, known for his work in the operation on blue babies; Dr. William Kouwenhoven, and Dr. James Jude, with Dr. G. Guy Knickerbocker, all of the Johns Hopkins staff of Baltimore, have now introduced into the rescue field a method of pumping oxygen-carrying-blood through the body while the heart is stopped. Closed-chest cardiac massage will often result in restarting the heart and saving a life.

The muscle fibers of the main pumping chambers of the heart, known as the left and right ventricles, can stop their contractile activity altogether and this state is known as cardiac standstill. This can occur for many reasons related to the control of the delicate balance of chemical salts and nutrients which supply food to the heart muscle.

Standstill occurs frequently when for various reasons the patient is unable to breathe and supply blood-borne oxygen to the heart, as well as other disease states which alter chemical balance. Cardiac arrest is quite often successfully treated by supplying properly nourished blood to the heart. Many times this simply means moving blood through the heart by this massage technique.

Early work

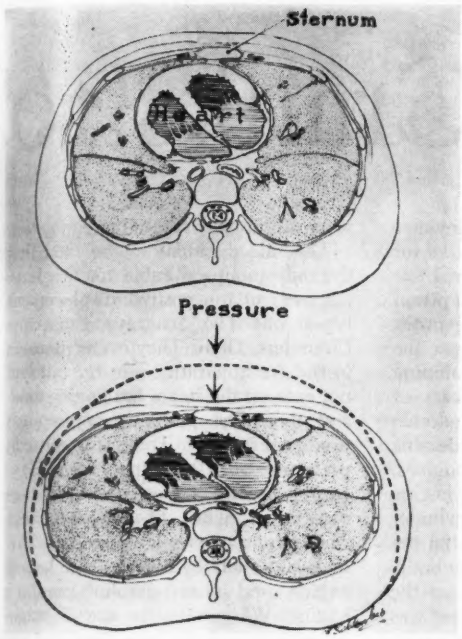
A few years ago Dr. Kouwenhoven tried various methods of stimulating a stopped heart. His original work was aimed at electric shock victims, but, the idea of external stimulation of the heart was broadened to take in all cases of cardiac arrest and cardiac standstill. The various methods of chest pounding, working too low on the chest, etc., were discarded due to unsatisfactory results obtained. In the summer of 1958, the present method of external massage was found experimentally to be the most proficient and could be done with less chance of damage to the ribs. Various cases brought into the Hospital began to prove, by their results, the work done by Dr. Kouwenhoven and Guy Knickerbocker.

Dr. Blalock did not want too much optimism generated because of the original successes. In the summer of 1959, the method was tried and was successful on a 12-year-old boy in the emergency room of Hopkins Hospital. Everyone then thought this method could be successfully used on children but were doubtful of results on older individuals.

Dr. James Jude, of the Hopkins Hospital staff, and one of the persons responsible for the clinical application of this method, used the technique successfully on persons ranging in age from 2 months to 82 years. This helped dispel any doubt of success of this method when used on patients in the older age groups. At the time of writing, chest massage has been used on 56 cases of cardiac arrest in Hopkins Hospital, and has proven successful in 44 of these cases.

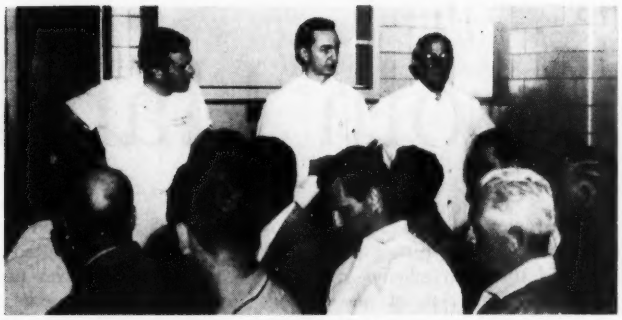
The author was invited to attend one of the clinical experiments. Upon noting how simple the method was to perform and how great the possibility for use in the emergency field, permission was then requested for instructing the ambulance crews of Baltimore City in the technique. Three groups of 105 persons were trained under Dr. Kouwenhoven and Dr. Guy Knickerbocker by means of oral instructions, a demonstration, participation, and a silent movie.

Four days after the second group had been trained, two crewmen, Fire-



Cross section of body showing sternum where heel of hand is placed. Above: No pressure is applied. Below: Compression of chest area with pressure applied

The author demonstrates massage technique during training session. Victim is Lieutenant Charles Toutloff



Baltimore Fire Department ambulance crew attend class at Hopkins Hospital. Standing, left to right, are: Drs. Guy Knickerbocker, James Jude and William Kouwenhoven who pioneered the massage technique

Fireman Hubert Cheek, Ambulance 2, demonstrates how he applied method on patient Bertie Bish on May 23, as Dr. Knickerbocker, right foreground, Dr. Kouwenhoven, standing next to Cheek, and crew members look on—*All photos by Lieutenant Leonard Swiss, Baltimore F. D.*

men Hubert Cheek and Marvin Burkendine, attached to Ambulance 2, answered a call for an unconscious man. Upon arriving at their destination, they found a 60-year-old male, unconscious, cyanotic, nonbreathing, and pulseless. The patient was removed from the bed to the floor. One crewman started closed-chest cardiac massage, the other mouth to-airway artificial respiration. A pulse was felt due to the massage and within five minutes the patient gasped.

The patient was then lifted onto a wheeled litter, Hopkins Hospital was alerted as to the condition of the patient and the run to the hospital was started. During the trip chest massage was continued and oxygen administered. At Hopkins Hospital during the setting up of the cardiograph and the External Defibrillator, the ambulance crew continued with chest massage. Hospital personnel took over within 10 minutes, the heart was defibrillated, oxygen administered, other hospital procedures followed and another life was saved.

In retrospect, this is what happened. Upon arrival at the home of the patient the ambulance crew found an unconscious person whose heart had stopped. This victim was a cardiac case. He could have been the victim of a moderate or severe electric shock, or might have been struck by lightning—cases which also produce ventricular fibrillation.

The regular, rhythmic pumping of blood by the heart, which is necessary for maintenance of life, can be upset. This is a condition where the fibers of the heart instead of beating in unison become as a bag of disturbed worms. The millions of fibers continue contracting but in a completely random fashion, so that there is no coordination and no blood is moved. This is ventricular fibrillation.

In this condition the pulse disappears and the heart stops pumping life-giving blood. The victim usually gasps for breath for a brief time before the lack of oxygen stops the respiratory center activity. These persons begin to die from anoxia, a lack of oxygen nutrient to living tissues, unless some way can be found to supply oxygen. This can be done by mouth-to-mouth and mouth-to-airway artificial respiration.

In the event oxygen has been denied to this person, and other complications beset him, there is apt to be ventricular fibrillation. Therefore, in both ventricular fibrillation and paralysis of the respiration, the victim

Continued on page 889

PART II—

From Hand Cranks to S

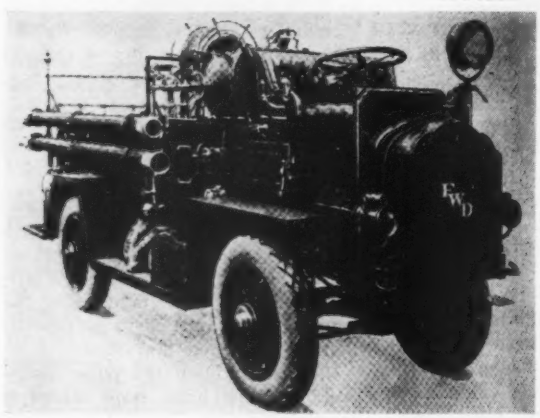
DURING the steamer era the reciprocating engine and piston pump had provided the most efficient combination for transmission of power from prime mover to pump. With this background it was a logical evolution for automobile apparatus builders to first think of applying piston pump principles to the new type of fire engine.

Knox Automobile Co., of Springfield, Mass., was one of the earliest builders of automobiles for fire department service. Chiefs' cars, squad cars and hose tenders were constructed for their home city and other New England fire departments. By 1911 Knox was giving attention to the expansion of the fire apparatus line and designed the combination pumping engine and hose car which was entered in the 1913 trials at New York. This apparatus had a two-cylinder double-acting piston pump of 600-gpm capacity and was powered with a six-cylinder 5-inch x 6-inch engine. The pumper shown at New York was painted and lettered for the FDNY but was not delivered.

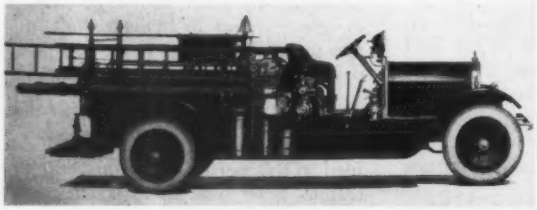
Another exponent of the piston pump was Robinson Fire Apparatus Mfg. Co., St. Louis, who began the manufacture of their piston pumping engines in 1911—after 35 years of production of hand and horse-drawn apparatus—and built up a considerable sale for their automobile fire engines.

The first Robinson pumping engine was provided with a triple-cylinder single-acting piston pump located between the driver's seat and hose body, and driven through spur gear on the main shaft. The gasoline engine was six-cylinder with 6¼-inch bore x 6¾-inch stroke. To overcome excessive pulsation Robinson later brought out a twin-triple pump. These were very successful and were built in large numbers for U. S. camps during World War I. Most of the Robinson pumpers were of 750 and 1000-gpm capacities.

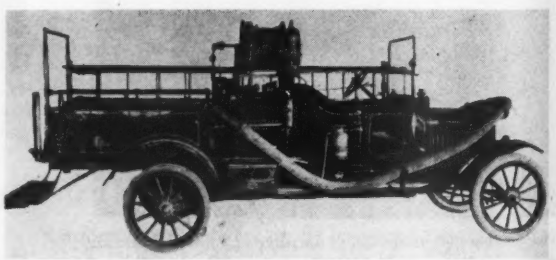
The sole dissident to the idea that the only pumps suitable for fire service were of the positive-displacement types was The Seagrave Company, Columbus, Ohio. They were pioneers in the fire apparatus industry but had not entered the steam fire engine field, and their first pumping engine was produced in 1911. This was a straight pumper of 1000-gpm capacity, equipped with a Gorham three-stage centrifugal with 11-inch impellers. The giant power plant had six 7¾-inch x 9-inch cylinders—the largest engine used in any gasoline pumping engine. While selective use of stages in pressure-volume operation had not yet been incorporated in fire engine pump design, the Seagrave three-stage pump performed exceedingly well at required volumes and pressures, and was a formidable contender for top sales honors.



Early FWD pumpers mounted Northern pumps. This four-wheel-drive triple combination was rated as a 3-ton vehicle



Original Stutz pumper-hose wagon was demonstrated at the Convention of the International Association of Fire Engineers held in Kansas City, Mo., in 1919



Howe Fire Apparatus Co. built more than 100 of its Model Ht 200-gpm triplex piston pumpers for U. S. Army during World War I on Ford Model T 1-ton truck chassis

1914 Hale Motor Co. pumper at Wayne, Pa., built on Simplex chassis with a 500-gpm rotary pump

Self-starters

Competition in the early days between the positive-displacement and non-displacement pumps was a knock-down, dragout battle and for several years apparatus builders were continuously making competitive demonstrations in attempts to prove the superiority of their respective types.

The progress and improvements in pump engineering and eventual outcome of the competition between designers are matters of well-known history. Advances in gasoline engines particularly influenced the design of pumps—the earlier slow-speed and high-torque engines being especially well suited to the characteristic of positive displacement pumps, while today's engines have speeds which produce high performance and efficiency curves for centrifugals of single and multiple-stage types.

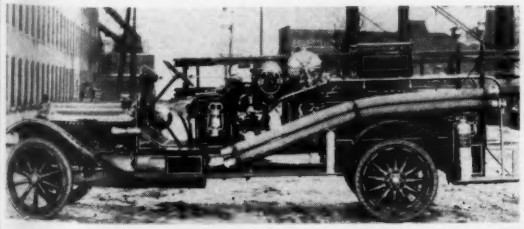
American-LaFrance Fire Engine Company strongly committed themselves to the rotary gear type of pump when they began the production of automobile pumping engines in 1911. Their rotary gear models, which were furnished in capacities up to 1,400 gpm, secured wide acceptance and in the early years were the most popular type. The first rotary gear automobile pumping engine made by American-LaFrance was powered by their four-cylinder engine, and was shipped to San Antonio, Tex., on June 10, 1911.

Not willing to lose a share of the demand for piston and centrifugal pumps from partisans of these types, American - LaFrance engineers designed a four-stage centrifugal with 11 inch impellers, and exhibited their first pumper of this model at the Providence convention of the IAFE in 1916. The company states that the first delivery of a centrifugal pumper was made to Troy, N. Y. The piston pump design was completed soon after the Providence meeting and the initial delivery of this type was made to Port Arthur, Tex., on December 6, 1916.

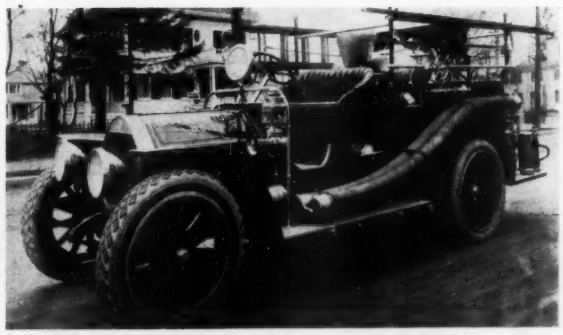
A development in 1914 which was destined to eventually have considerable influence on fire engine manufacturing trends was the entry of Hale Motor Company, Wayne, Pa., into the fire pump industry. Messrs. Alan C. Hale, E. J. Wendell and C. H. Young, Jr., founders of Hale Fire Pump Company, were members of Radnor, Pa., Fire Company when that company purchased the first automobile fire engine and whenever this new wonder gave trouble it was these men of Hale Motors Garage who made the repairs. They decided to undertake the building of a pump for use on motorized fire apparatus and on the completion of the first model mounted it on a Simplex chassis. This was the first of many pumpers built by Hale Company, who incorporated and moved to Conshohocken in 1917. They discontinued the assembly of apparatus in 1940 and have since specialized in the building of rotary and centrifugal types of pumps for a number of fire apparatus manufacturers.

The Mack Motor Truck organization started as bus and truck builders

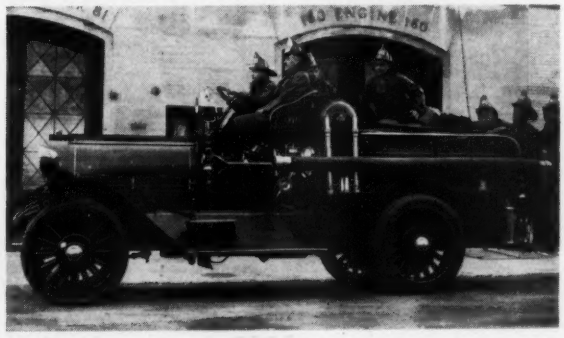
White triple combination mounted 600-gpm pump and featured left-hand drive



Pirsch built first pumper in 1916 on White chassis with Rumsey 500-gpm pump



The first Maxim pumper was built in 1915 on a Thomas chassis with rotary pump. It was delivered at Hamden, Conn.



New York City's first combination hose and pumper was delivered by Nott Fire Engine Company in 1915

in Brooklyn in 1900 and moved to Allentown, Pa., in 1905, where their first automobile pumping engine was produced in 1911 for Phoenixville, Pa. This apparatus had a rotary-gear pump mounted high above the frame back of the seat. After this pumper had been successfully put in service, Mack-International adopted the rotary-gear pump built by Northern Fire Apparatus Co., Minneapolis, as their standard until Byron Jackson Company, Berkeley, Calif., brought out the series-parallel pressure-volume centrifugal pump, which was first used on fire apparatus by the Mack Company in 1927.

Maxim Motor Company, Middleboro, Mass., were another pioneer builder of automobile fire engines. They began the production of pumping engines in 1915, using the Thomas Flyer chassis and a Rumsey rotary-gear pump for the combination pumper and hose car which they delivered to Hamden, Conn. In 1916 they brought out their own completely built pumper which was designed by C. A. Carey, who is still with the company. This apparatus was powered with a six-cylinder engine, with a riser gear box on top of the transmission which came up and drove forward to a Rumsey rotary pump. The apparatus featured worm drive axle, pneumatic tires and triple ignition with three sets of spark plugs.

Peter Pirsch & Sons Company, of Kenosha, Wis., one of the country's oldest builders of fire apparatus, assembled their first pumping engine in 1916, using a White chassis and Rumsey rotary-gear pump. This White-Rumsey assembly was followed by the first of the long line of Pirsch-built pumpers on which Hale rotary and centrifugal pumps have been featured.

James Boyd & Bro., Inc., Philadelphia, were another of the pioneer producers of fire appliances who entered the automobile fire engine field, manufacturing all types of motor apparatus during the days of mass changeover from horse-drawn to motorized apparatus. In 1916 they advertised "our standard specifications for all types of fire apparatus include worm drive," making them one of the first builders to adopt it as standard equipment.

Stutz Fire Engine Company, Indianapolis, entered the competition for fire engine business when they exhibited their first pumper on June 26, 1919 at the Kansas City convention of the International Association of Fire Engineers. The Stutz Company used the pumps and equipment of specialty manufacturers in their assemblies and for several years were rated among the progressive and successful producers of apparatus of advanced design.

The White Company, Cleveland, one of the largest builders of commercial trucks, entered the fire apparatus field in 1919. White Company assembled all types of apparatus on their heavy-duty chassis and were immediately successful in this branch of their activities, securing several large contracts for fire apparatus during the first year of operation.

Four Wheel Drive Auto Company built its first fire engine in 1917 for the City of Minneapolis. This apparatus was equipped with a Northern rotary pump. In 1919 Four Wheel Drive exhibited a 750-gpm pumper at the Chicago Motor Truck Show, this unit also being fitted with pump and other fire equipment furnished by Northern Fire Apparatus Co. Since then, FWD —except when heavy military vehicle contracts required all of the facilities of their factories—have been an important producer of fire apparatus.

The Webb pumper built for Lansing in 1908 on an Oldsmobile chassis

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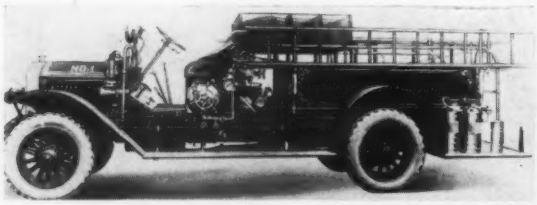
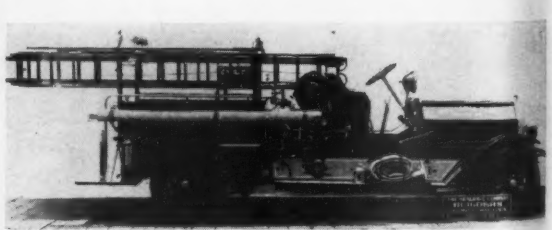


First Maxim built on own chassis featured left-hand drive and was delivered in 1916

Early Washington, D. C., Ahrens-Fox was a straight pumper. Seats were provided in rear for the crew

First gasoline pumper of Schenectady, N. Y., Fire Department employed Westinghouse pump and was originally horse-drawn. It was later mounted on Mack chassis with pump engine mounted in rear

Engine 38, Chicago Fire Department, sported early Mack "Bulldog"



Seagrave triple combination of 1915 was equipped with two-stage centrifugal pump

Volunteers protect the McLean County Fair

By ANDREW S. WASHBURN

ABOUT 10 OR 12 YEARS ago the Bloomington Township, Ill. Volunteer Fire Department began providing fire protection for the McLean County Fair, one of the largest 4-H fairs in the world. This annual event was then located on the south edge of the township.

The fire department would take its pumper over to the grounds the day the fair opened and stay until the last show was out; a period from Monday morning to Thursday night. An extension phone was available at the fire department tent, so the district was really protected better during the fair than at other times due to having two or three men on continuous duty at that time. Later on, the department added a tank truck and stationed both on the grounds.

The fair outgrew the old grounds, so a new site was purchased on the East side of Bloomington. Since it is now in a far corner of the fire district, which is 6 miles square, it is a long run in case of fire in the opposite corner. The fair also wishes the apparatus to be stationed there longer because during the last year at the old grounds a cattle tent, 60 feet x 200 feet, burned down two days before the fair opened. It was fortunate this happened at such a time instead of after the tent was occupied. Due to the length of time the fair officials desire the protection, the Bloomington Fire Department asked some of the other fire departments in the county two years ago to help man the service. At present Bloomington furnishes one man on each six-hour shift, and each of the other departments now furnish two men to help.

In 1959 the fire department was fortunate in obtaining a demonstrator truck for use at the fair grounds. Thus it was able to leave the pumper at the regular station. This prevented any worry of how the apparatus would respond from the grounds if an alarm was received when traffic was heavy coming in or going out.

A pickup truck with a 300-gallon tank and a portable pump with a 1½-inch hose is now also used. It is expected that this type of truck will be used altogether in the future as it is much easier to maneuver around the crowded grounds. Several corn knives are carried in the vehicle. These are employed to cut ropes in the event a tent catches fire. The canvas drops to the ground and extinguishment proceeds.

In 1960 it is expected that about 650 hogs, 380 beef, 280 dairy, 250 poultry, 230 sheep and 200 rabbits will be exhibited. At some of the better shows, there will be about 10,000 people in attendance. The Bloomington Township Fire Department, assisted by neighboring departments, is doing its best to protect this rural event. It will welcome all comments or suggestions concerning improvements in this difficult task. □□

Fairgrounds layout during 1959 fair. Fire station (arrow) is manned 24 hours a day prior to and during annual event

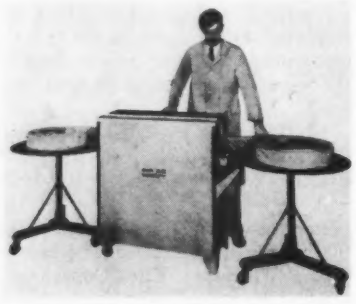
WHAT'S NEW

Among the Manufacturers

- products
- processes
- personalities

Redesigned Hose Washer

The Circul-Air Corporation, 575 East Milwaukee Avenue, Detroit 2, Mich., announces its redesigned compact model "A–Z" hose washer.



A low-priced washer to fit the budget of any small to medium-sized fire company, it is ruggedly built and manually operated. The turntables are sold separately and may be utilized for loading hose dryers or for reloading the fire truck.

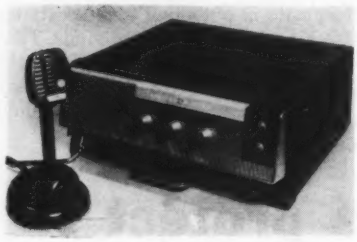
IH Travelall Ambulance

R. J. States, Inc., 115 East Columbia Street, Springfield, Ohio, is presently offering an International Travelall ambulance conversion which utilizes the Model B-100, B-110, B-120 or B-120 (4 x 4) International Harvester Co. chassis. All options on the basic vehicle are said to be available and the units may be obtained through regular IHC sales outlets.

New Stretch'R-Cot

Ferno Manufacturing Company, Greenfield, Ohio, has introduced its Model No. 32 elevating Stretch'R-Cot said to have finger-tip control of four height adjustments from 9½ inches to 31½ inches. The feature is said to permit easy use in cars with less than 35-inch headroom. Another new feature, also available on other Ferno models, is a new reflective fabric on the back of footrests. The use of "Fernolite" is said to increase nighttime safety by reflecting headlights of oncoming cars when the cot is employed along streets or highways.

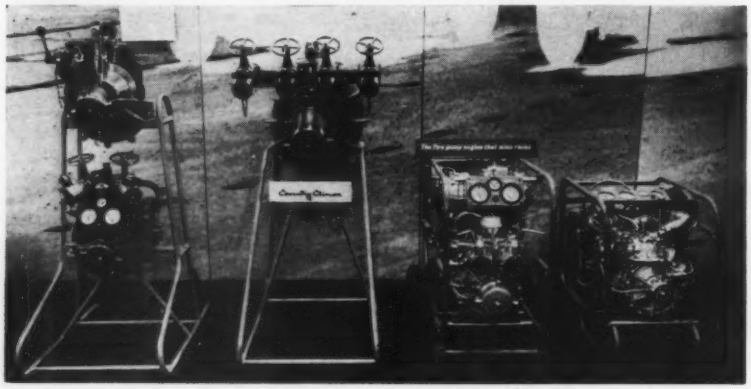
New G-E Table Unit



General Electric Communication Products Department, Lynchburg, Va., announces a new table model two-way radio unit. Models up to 60 watts are available in low band (25-54 mc. and 72-76 mc.), up to 50 watts in high band (144-174 mc.) and 15 watts in UHF (450-470mc.). Selective calling features are optional extras.

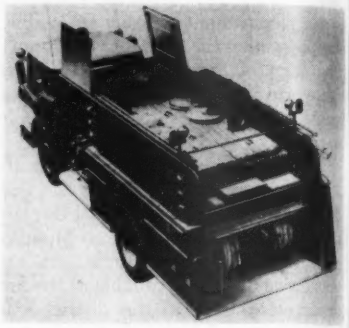
Coventry Pumps Displayed at British Exhibition

Coventry Climax Engines Ltd., Coventry, U. K., exhibited some of its Godiva fire fighting pumps at the recently concluded British Exhibition at the New York Coliseum. Styles shown included midship and rear-mounted apparatus pumps in capacities from 600 to 1,200 U. S. gpm and portables ranging from 100 to 570 U. S. gpm. United States representative is Highway Products, Inc., Kent, Ohio.



Unique Hannay Reels

The Westerlo, N. Y., Volunteer Fire Company, Inc. recently placed in service an American LaFrance 750-gpm pumper on a Ford 950 chassis which mounts two electric rewind hose reels in a large rear



step cabinet. Supplied by Clifford B. Hannay & Son, Inc., of Westerlo, the reels hold 200 feet of 1½-inch double-jacket cotton rubber-lined hose. Two matched electric rewind Hannay booster reels are also mounted in an enclosed cabinet behind the apparatus cab.

Fire Guard Extinguisher

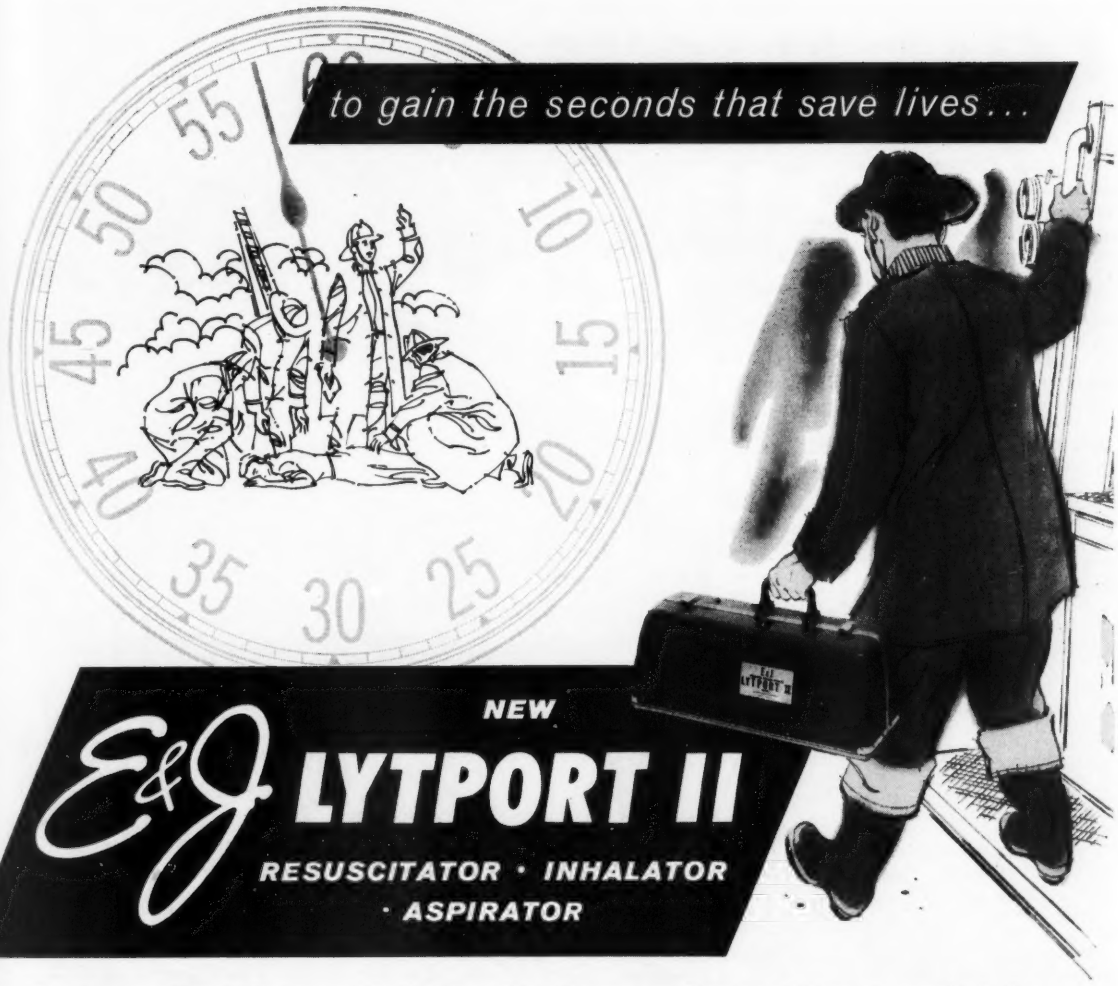
The Fire Guard Corporation, Northbrook, Ill., is expanding the development of a special fire extinguisher which uses "Monobromotrifluoremethane," recently developed by the U. S. Army as an extinguishing agent.

The new compound is said to be twice as effective as any other extinguishing agent against liquid fuel and electrical fires and can be mixed with helium or nitrogen, creating a combustion-free atmosphere. Said to be useful at temperatures as low as 65 degrees below zero, it is claimed to be essentially nontoxic and noncorrosive.

The new extinguisher, weighing less than 3 pounds, holds 1 quart of the compound. With a specially designed nozzle, the fluid can be discharged in less than 12 seconds.

Fire Guard, although currently producing units for the U. S. Army, announces an Underwriters' approved commercial unit will be available this coming year.

Continued on page 898



Speed saves lives! Rescue workers know that the sooner disaster victims are reached, the better the chances are of saving their lives. The new E & J Lytport II—the result of over thirty years' experience in making emergency equipment—is the ideal unit for dependable, fast-action resuscitation, inhalation and aspiration.

- ***EASY TO CARRY*** . . . only 28½ pounds. Rounded corners, over-size handles, perfect balance.
- ***COMPACT*** . . . only 9½" wide, 10" high, 24" long. Fits easily into car, truck or ambulance.
- ***DEPENDABLE*** . . . pre-set pressures and simple control provide proper aid under any conditions.
- ***NEAT APPEARANCE*** . . . green Fiberglas case is impervious to water, oil, grease and chemical sprays—easy to keep clean.
- ***VERSATILE*** . . . and easy to use. No special skill required. With added hose, aid can be brought to victims at any distance from the unit.

Ask your fire equipment dealer to demonstrate the new E & J Lytport II soon.

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FALSE ALARMS

Hardrock O'Connor was seated in a train beside a pompous individual who had an expensive looking hunting dog in a crate beside him.

"That's a fine dog you have," said the veteran captain. "What kind is it?"

"A cross between an Irishman and an ape," replied the haughty one.

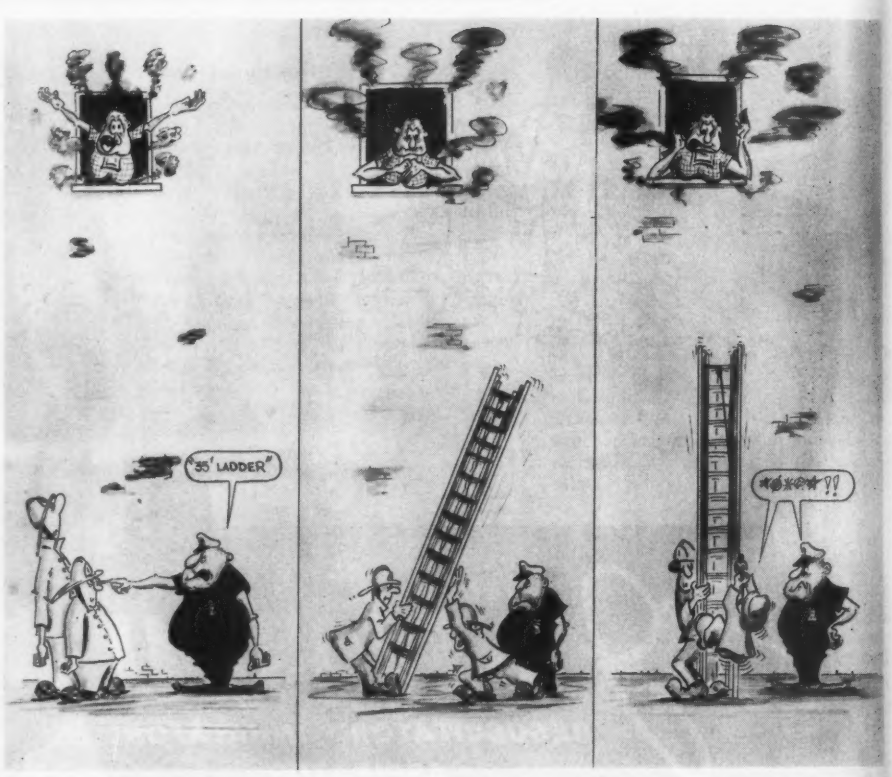
"Sure now," rejoined the smoke eater, "it's related to both of us."

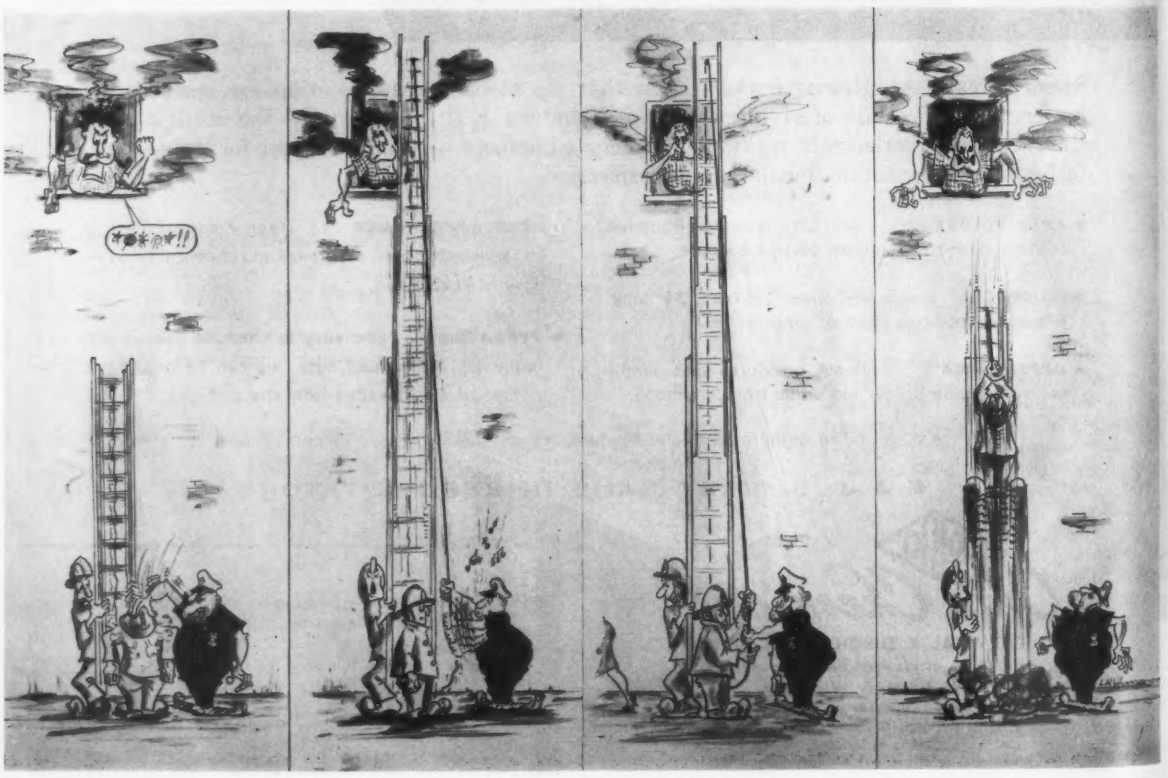
"The weather here in Florida is so wonderful," said the old lady, "how do you tell summer from winter?"

Replied the hotel clerk, "In winter we get Cadillacs, Lincolns and stuffed shirts. In summer we get Chevrolets, Fords, and stuffed shorts."

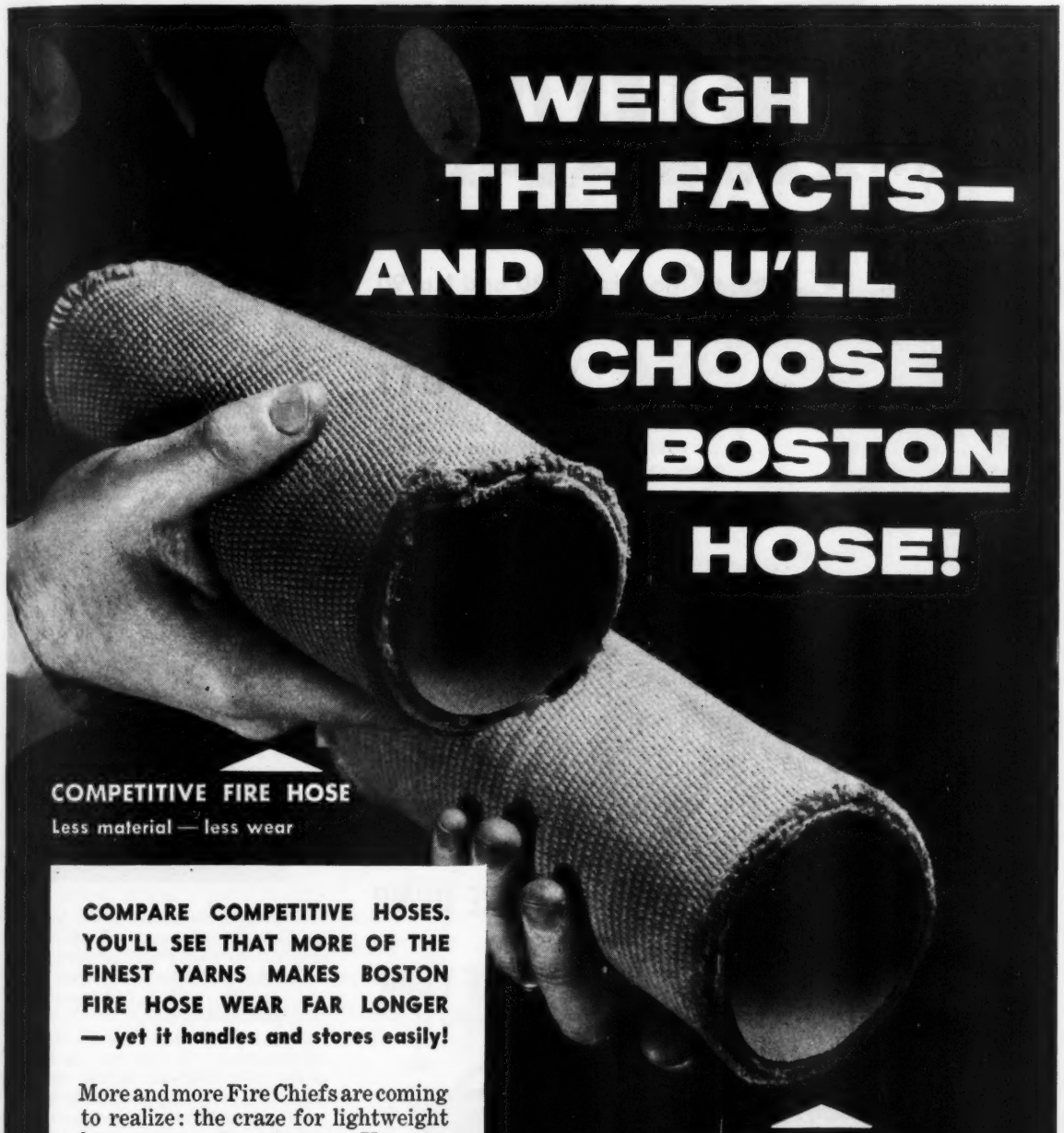
The family doctor met Kinkchaser's wife on the street and inquired, "Is your husband taking his medicine religiously?"

"Hardly," answered the spouse, "He swears every time I give it to him."





WEIGH THE FACTS— AND YOU'LL CHOOSE BOSTON HOSE!



COMPETITIVE FIRE HOSE
Less material — less wear

COMPARE COMPETITIVE HOSES. YOU'LL SEE THAT MORE OF THE FINEST YARNS MAKES BOSTON FIRE HOSE WEAR FAR LONGER — yet it handles and stores easily!

More and more Fire Chiefs are coming to realize: the craze for lightweight hose can go to extremes. You can sacrifice wear for weight. Take out material, and you lose durability.

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More material — far longer wear!

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Models No. 80 and No. 90

ALWAYS WIN OUT!

To lead the field you need the favorites . . . INDIAN FIRE PUMPS. Many new features so pump will not bind or leak. Insist on INDIANS . . . *a sure bet every time!*

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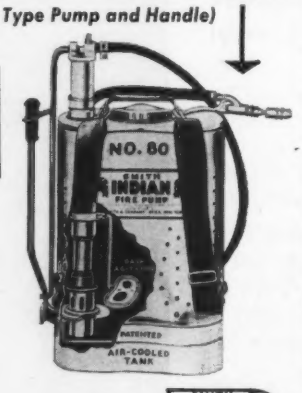
(Sliding Pump Type)

No. 80 INDIAN FIRE PUMP
(Lever Type Pump and Handle)

Send for folder describing NEW FIBER-Glass No. 90 INDIAN FIRE PUMP. Light weight. Will not rust or corrode. Solid brass pump.



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Among the Buffs

By Paul C. Ditzel

AFTER 45 YEARS as a fireman, during which time he drove horse-drawn rigs and fought fires from helicopters, Chief George Bertsch of the West Point Military Academy Fire Department plans to retire and become a buff.

Chief Bertsch says he is certain that at 66 he is the only active fire chief who can lay claim to driving horse-drawn apparatus (in Buffalo) to using helicopters while fighting brush and forest fires on West Point's 16,000-acre reservation.

George estimates he's fought more than 8,000 fires during his lifetime and is also proud to say he's never lost a man or had any of his subordinates injured, although he has suffered several major injuries himself.

Aside from his loyalty to the fire service, Chief Bertsch was one of this nation's most famous track stars and bicycle racers. He has served as an Olympics official and as I write this he is on his way to the Olympic Games in Rome.

George makes a hobby of coaching track and was my first real coach back in the early 1940's in Buffalo. Even today he keeps in shape by riding his bike around West Point. On a recent holiday he pedaled 56 miles. All of which should serve as some sort of an object lesson to this slightly paunchy ex-quarter miler.

The mails bring the 1960 Edition of *The Visiting Fireman* edited by Ed R. Damaschke. This comprehensive pocket-sized book contains the most complete directory of buffs and buff clubs available and should provide the answer to so many questions posed to this column. The book is available for $1.00 from Ed at P. O. Box 55, Ferndale 20, Michigan.

Brer Damaschke also sends along the news that the International Fire Buffs Associates, Inc., have elected the following officers: Edward J. Gill, Chester, Pa., president; Damaschke, secretary; Edward A. Massman, Orange, N. J., treasurer; and the following vice presidents: William H. Perkins, Boston; Julian Forrest, Baltimore; John Ryan, St. Louis; Keith Franz, Milwaukee; Jack Cole, Jer-

sey City; and Harry Haddon, Chicago. The IFBA 1961 Convention will be in Chicago.

Speaking of Chicago, Fire Fan Jeff Schwartz of Engine 78 and Ambulance 6 says that house recently played host to Alejandro (cq) Sanchez, a 26-year-old vamp from Ica, Peru. Sanchez is hitchhiking around the world via boat and goat cart and is visiting departments of the 21 nations and 18 states through which he is passing.

Jeff says he is compiling a history on the Paid Fire Department of Chicago from 1858 to 1958 and needs data from 1934 to 1954 because there were no annual reports during this period. "If any of your readers have information pertaining to this era, I shall be more than happy to acknowledge any letters which might reach me," writes Fire Fan Schwartz, 1032 Waveland Avenue, Chicago 13, Ill.

Fire Buff William E. Selig of 407 N. Pennsylvania Street, Indianapolis 4, Ind., says plans are under way to reprint King's "History of the American Steam Fire Engine," at a nominal price. This column is following the progress of this project with great interest and I hope to bring you more details when the book comes off the press.

Eugene Belle, 219 Summer Street, Arlington 74, Mass., is hopeful of buying issues of FIRE ENGINEERING from 1910 to 1945. He also would like to obtain photos and old advertisements for apparatus during that period.

After a too-long period of inactivity, *The Third Alarmer, News Bulletin* of the Third Alarm Association, is again being published. Editor is Bernard Grandjany, 235 West 71st Street, New York 23. Assisting him will be Mort Greenbaum, Ira Marion, George Meade, and Vince Moses.

First edition of the paper describes how the TAA'ers supplied coffee, doughnuts, sandwiches and a chocolate layer cake to firemen fighting a five-bagger on Staten Island. This accomplishment despite the fact that the fire was 14 miles from the nearest ferry terminal. No wonder New York's Chief Halligan once said, "If the professional fireman could reach the status of a buff, then he would be the greatest fireman in the world."

Department of Marital Bliss: In San Francisco, Doc Levin, editor of the *Phoenician News*, says that when simultaneous second alarms were struck, Phoenician Jerry Snow took in one and sent his wife, Ruth, to the other. Jerry was given credit for the double response on the society's books.

Not long ago, Baltimore's 414 Association received a call for coffee service at 11:30 p.m. On the way to 28 Engine to make coffee the buffs saw a sofa and two chairs burning in front of 420 North Broadway. The buffs kept matters under control until Engine 9 and Truck 3 rolled in to hand pump the problem.

Quite a group those 414 buffs:

They attend the Baltimore Oriole and Colt games without fear of missing a fire or being needed on the coffee wagon. Arrangements have been made with the stadium office for a special call for members in the stands. When the stadium's

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That RICH GOLDEN FINISH LASTS For The LIFETIME Of Your Badge!

Each Blackinton HI-GLO Badge is made from a special new metal alloy. HI-GLO metal is solid golden color throughout, a metal that just can't lose its finish like ordinary plated badges. If you could rub hard enough to remove the sharp deep cut design of a Blackinton Badge . . . You could not remove this brilliant golden HI-GLO finish.

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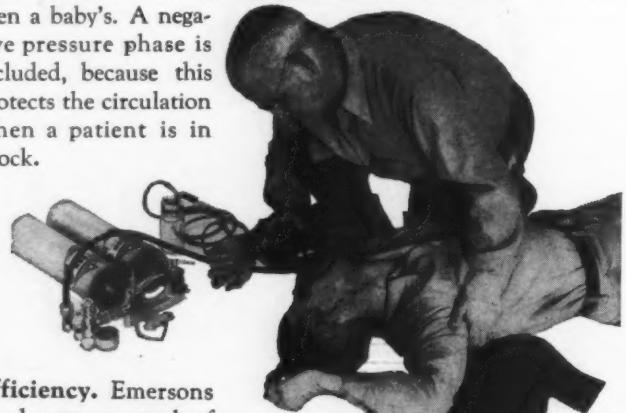
are trusted in emergencies

1. **Simplicity.** Speed saves lives and simplicity means speed. Emersons have it.

2. **Safety.** The factory-set pressures have proved effective, and are not adjustable. In over 16 years, since their acceptance by the American Medical Association, they have never harmed a lung, even a baby's. A negative pressure phase is included, because this protects the circulation when a patient is in shock.



3. **Efficiency.** Emersons run longer on a tank of oxygen (45 minutes on a "D" tank, if the mechanism is **air-mixing**). On a beach or other remote place this factor may save a life.

4. **Adaptability.** Standard models can be adapted for **dual, triple,** or **quadruple** use. Extension hoses can be used to give full protection 400 feet away from the parent machine, complete with **aspirator** as well as **resuscitator** and **inhalator** functions. Large cylinders can be hooked up, for long cases, by using a flexible connector.

5. **Quality.** Workmanship and materials are superlative, guaranteed by the factory (for two years) and checked by our representatives throughout the United States and Canada.

These advantages add up!

EMERSON RESUSCITATORS
can help you save lives!

See your Emerson representative or write:

J. H. EMERSON CO.
CAMBRIDGE 40, MASSACHUSETTS, U. S. A.

public address system announces, "Number 298 call your headquarters" the buffs can consider themselves tipped off that duty calls.

Ronald Cohen, P. O. Box 6124, Lakewood, California, is hopeful of buying books, pictures, or anything about the fire service.

That's about the size-up for this month. Please continue to send your anecdotes and reports to me at 4234 Don Diablo Drive, Los Angeles 8, Calif. □□

What's Burning

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from July 18th to August 17th.

Dauphin Island, Ala.—Fort Gaines Club destroyed.
Yuma, Ariz.—Lee's Radio & TV Repair, automotive shop, house trailer, cars and apartments destroyed or damaged.
Ashdown, Ark.—Sutton Electric & Appliance Co. store destroyed.
Lodi, Calif.—Delta Wood Products destroyed.
Palermo, Calif.—Smith Olive Processing Plant and at least 10 dwellings destroyed.
Palo Alto, Calif.—China Lady Dress Shop and S. Christian of Copenhagen at Town & Country Shopping Center, damaged.
Sacramento, Calif.—Western-Gillette truck terminal damaged.
Sacramento, Calif.—Palance Laundry, apartment dwelling and two other dwellings, damaged.
San Francisco, Calif.—A-A Plating Works Co. and apartment dwelling destroyed. Children with matches.
San Francisco, Calif.—Alto Roofing Co. destroyed.
San Francisco, Calif.—Duplex dwelling at 3576-A Castro Street badly damaged.
Sunland, Calif.—Twelve dwellings destroyed. Children with matches.
Meriden, Conn.—Cabin Grille restaurant damaged.
New Britain, Conn.—Belden Street building of Hartford Provision Co., formerly Cremo Brewing Co., badly damaged.
Waterbury, Conn.—Anglo Metal Finishing Co. damaged.
Delaware City, Del.—Huge tank at Tidewater Oil Co. refinery damaged. Lightning.
De Land, Fla.—The Volusia Feed Store destroyed. Building also housed offices of John Witt Contracting Co. and Florida Installation and Supply Co.
Atlanta, Ga.—Dobbs Clothing and adjacent store extensively damaged.
Atlanta, Ga.—Glasrock Products, Inc., ceramic die and mold plant, damaged.
Monroe, Ga.—Chicken house on Oscar W. Cunsey poultry farm destroyed.
Jerome, Idaho—Northside Lumber & Mercantile Co. destroyed.
East St. Louis, Ill.—Playdium Bowling Alley of former baseball star Terry Moore damaged.
Pontiac, Ill.—Pontiac Chair Co. damaged.
Rockford, Ill.—Henley Furniture Co. warehouse destroyed; Jeffrey Supply Co., wood specialty firm; Packard Chair Rental Service and six dwellings, damaged.
Sullivan, Ill.—Gauger Lumber Co., Hagerman & Harshman Planing Mill and two nearby dwellings, destroyed.
Martinsville, Ind.—Central Coil Co. damaged.
Spencer, Iowa—Spencer Golf & Country Club destroyed.
Kansas City, Kans.—Inter-State Oil Co. warehouse destroyed.
Campbellsville, Ky.—The Cherry Shop, furniture manufacturing plant, destroyed.
Jonesville, Ky.—U. S. Post Office building and adjoining restaurant destroyed.
Louisville, Ky.—Building housing Surplus Liq-

uidators, and Stevens-Smith Floor Covering damaged.

Middlesboro, Ky.—Middlesboro-LaFollette bus terminal, including seven buses and adjoining building, destroyed. Explosion.

Winchester, Ky.—Browning Turkey Farm hatchery and refrigeration plant damaged.

New Orleans, La.—Several buildings, including R. J. O'Shaughnessy Service Station, City Auto and Body Co., Standard Roofing Co., Fisher Foundry and George Grosch Wholesale Grocery, damaged.

South Francisville, La.—The Greenwood Plantation destroyed.

Bar Harbor, Me.—Large summer dwelling of Berthold Strauss destroyed.

Baltimore, Md.—Ferguson's Cleaners & Dyers, Kuzma's Bakery and photographic studio destroyed; Sunny's Surplus Store, David's Credit Jewelers, the Lingerie Shop and Michael's Beauty Salon, damaged.

Ellicott City, Md.—Tri-Delphia Lumber Co. sawmill destroyed.

Amesbury, Mass.—Brody Wood Hall Co. extensively damaged.

Beverly, Mass.—Ralph's Variety Store and Chester Hooper's Store damaged.

Boston, Mass.—One-hundred-and-three-year-old abandoned Franklin School destroyed.

East Gloucester, Mass.—Old Masonic Building, housing post office substation and drug store, damaged. Suspicious origin.

Medford, Mass.—Medford High School damaged. Overheated boiler.

Peabody, Mass.—Kirstein Leather Co. considerably damaged. Spark from workman's tool caught residue from spray booth.

Quincy, Mass.—Old wharf at Long Island Hospital damaged.

Flint, Mich.—Flint Asphalt & Paving Co. plant damaged. Faulty control system on asphalt heating system.

Roscommon, Mich.—Two-story boat shop on Higgins Lake destroyed.

Columbus, Miss.—Lann Furniture Co. and Bluff City Distributing Co. destroyed.

University, Miss.—Campus fraternity house of University of Mississippi destroyed.

Kansas City, Mo.—One wing of Loma Vista shopping center, housing the Rider Food Center, including a bakery, grocery and restaurant, destroyed.

Butte, Mont.—Duplex at 210 N. Crystal destroyed. Five boys admit setting fire.

Yellowstone Park, Mont.—Vacant, historic Canyon Hotel and former two-story dormitory destroyed.

Hampton Beach, N. H.—Four cottages at Fireside Hotel destroyed; hotel and several smaller buildings damaged.

Garfield, N. J.—Dwelling of Benjamin Merlino and Elizabeth Street Knitting Mill damaged.

Hackettstown, N. J.—Hackettstown Bowling Alley, S & S Restaurant and apartment in 225 Main Street building, damaged.

Hohokus, N. J.—Chestnut Ridge Stables destroyed.

Kearny, N. J.—Frederick Snare Corp. damaged.

Maplewood, N. J.—Doughnut Box destroyed.

North Bergen, N. J.—Devonshire Melba Corp. plant destroyed.

Colchester Station, N. Y.—Barn on Clair Smith farm destroyed.

Hicksville, L. I., N. Y.—Two-story buildings, housing Kantor Bros. Tire Co., Joyce-Louise School of Music, Blackman-Klein Wholesale Plumbing Co., Bing's Laundry, Old Country Realty Office and apartments, destroyed or damaged.

North Salem, N. Y.—North Salem Grade School destroyed.

Oswego, N. Y.—Duell Co. sawmill destroyed. Defective wiring.

Poughkeepsie, N. Y.—Stevens' Furniture Store destroyed.

Asheville, N. C.—Bon Marche department store damaged.

Durham, N. C.—Mangum High School destroyed.

High Point, N. C.—Hammond Organ Studios extensively damaged.

Kinston, N. C.—T-Bird Speedway and 16 Go-Kart racers destroyed. Welding sparks.

Point Harbor, N. C.—Belangia's Restaurant destroyed.

Smithfield, N. C.—Howell Theatre destroyed.

Supply, N. C.—W. G. Kirby & Son and R. Galloway Co. destroyed.

Winston-Salem, N. C.—Cleo's Beauty Salon and Anchor Co. badly damaged. Short circuit.

Please turn page

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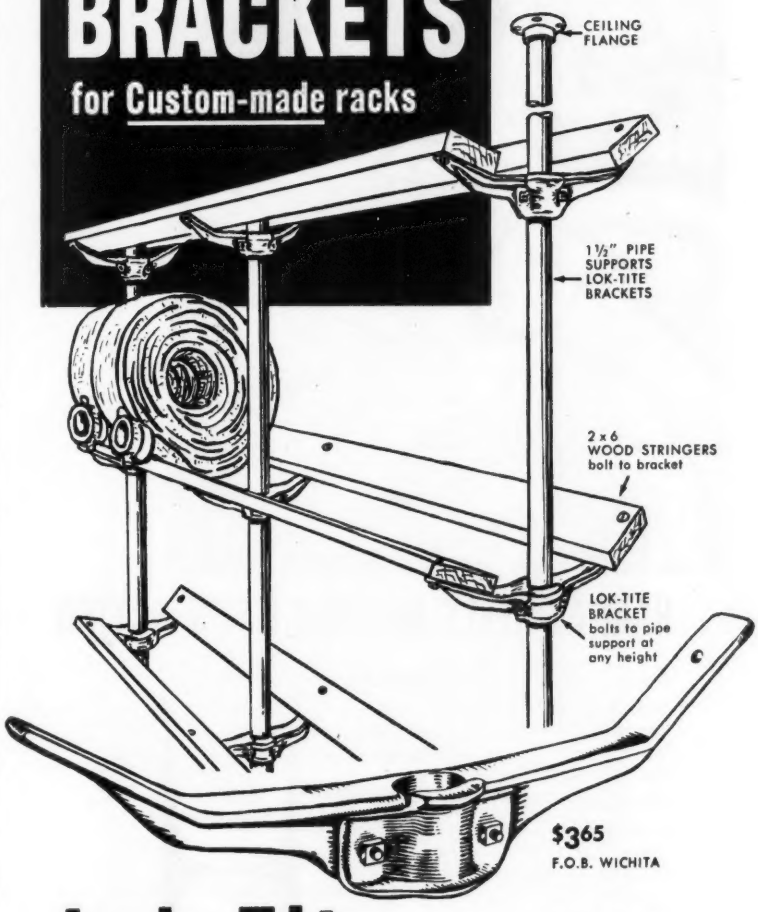
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LOK-TITE BRACKET bolts to pipe support at any height
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LOK-TITE brackets are ideal for odd dimension areas where ready-made storage will not fit. LOK-TITE brackets encourage good housekeeping . . . assures easy hose inspection and correct ventilation. LOK-TITE brackets are approved by fire hose manufacturers and fire departments everywhere.

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- Simple to install
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Hannay reels give you instant action in fighting the countless fires where the booster hose is needed first. And when the out bell sounds, dependable Hannay chain drive gives you positive, controlled rewind even under the most adverse conditions. Only firefighters can know the demands made on every piece of their equipment, and Hannay reels are designed and built by working firefighters. Be sure you specify and insist on hose reels by Hannay.

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municipal and industrial fire fighting equipment

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Winston-Salem, N. C.—Wes Livengood Furniture Co. extensively damaged.
Fargo, N. D.—Part of building housing office of Quality Mobile Homes and an adjacent warehouse destroyed.
Brookville, Ohio—Brookville Farmers Grain Co. elevator, main building and three smaller structures, destroyed. Loss included trucks and machine shop operated by Ed. Rhoades in one elevator building.
Columbus, Ohio—Extraction plant of Inland Products Inc. damaged. Explosion.
Findlay, Ohio—Woodward Lumber Co., 610 3rd Street, destroyed. Arson suspected.
Findlay, Ohio—Lumbertown, 701 West Sandusky Street, destroyed. Arson suspected.
Xenia, Ohio—Happy Day Cleaning Shop damaged.
Boring, Ore.—Summit Lumber Co. destroyed.
Oregon City, Ore.—Edward Garage destroyed.
Portland, Ore.—New System Laundry destroyed.
Portland, Ore.—Warehouses of Roy L. Brown plumbing contractor and Ray E. Hamman Heating Co. destroyed. Faulty pipe cutting machine.
Silverton, Ore.—B. & R. Sawmill destroyed.
Sweet Home, Ore.—Santram Lumber Co. damaged. Faulty welding.
Sweet Home, Ore.—Sweet Home Veneer plant destroyed.
Bethlehem, Pa.—St. Ursula's Roman Catholic Church damaged.
Collegeville, Pa.—Big Pixey drive-in restaurant damaged. Grease vat.
DuBois, Pa.—J. J. Newberry five-and-ten-cents store, two other stores and restaurant destroyed.
Lancaster, Pa.—McMinn Industries, Inc. building damaged.
Liverpool, Pa.—Two warehouses, gasoline station and dwelling destroyed.
Morrisville, Pa.—Morrisville High School badly damaged.
Penndel, Pa.—Spolar Mfg. Co. destroyed. Explosion.
Philadelphia, Pa.—John's Bargain Store at 7th and Snyder Avenues destroyed.
Philadelphia, Pa.—John Wanamaker store warehouse and three United Parcel Co. trucks badly damaged.
Philadelphia, Pa.—Pennsylvania Railroad's North Philadelphia freight station damaged.
Philadelphia, Pa.—State of Pennsylvania, Riverview Lines excursion vessel at Pier 4 damaged. Workman dropped blazing oil pan into air duct.
Sharon, Pa.—Sawhill Tubular Products Co. damaged. Explosion.
Uniontown, Pa.—Central Christian Church damaged.
East Greenwich, R. I.—Eldredge Elementary School extensively damaged.
Pawtucket, R. I.—George's Gasoline Outlet badly damaged. Overheated paint can spilled onto hot plate.
Providence, R. I.—Building housing Ballard's Restaurant and National Paper Co. warehouse badly damaged.
Woonsocket, R. I.—Ray Cotton Co. considerably damaged.
Seneca, S. C.—Seneca Oil Mill plant severely damaged.
Athens, Tenn.—Graham Service Station damaged. Defective wiring.
Chattanooga, Tenn.—Ray Moss Farms Inc. milk processing plant damaged.
Kingston, Tenn.—Kingston Lumber Co. sawmill and planing mill destroyed.
McMinnville, Tenn.—H. G. Hill Store considerably damaged.
Memphis, Tenn.—Woody Herrin Produce Co. damaged.
Moscow, Tenn.—New Zion School for Negroes destroyed.
Nashville, Tenn.—Furniture building at Tennessee State Penitentiary and two adjoining buildings destroyed.
Nashville, Tenn.—Oakland Farms Barns destroyed.
Savannah, Tenn.—Shopping center of David Shaw, housing N. C. Edwards Motor Co. and furniture store and a sheet metal firm, damaged.
Houston, Tex.—Rheem Mfg. Co. plant badly damaged. Explosion.
San Antonio, Tex.—Good Shepherd Home Laundry in Girls' Home damaged.
Spanish Fork, Utah—Four buildings at the American Cyanamid Co. plant destroyed. Brush fire.

Brandon, Vt.—Adjoining C. L. Goodheart Meat & Grocery and hardware store of Cecil Goodheart damaged.

Kenbridge, Va.—Building housing Bridgforth Tobacco Co. drying plant and Imperial Briquet Charcoal Co. destroyed.

Tazewell, Va.—River Jack Restaurant destroyed; Piggly Wiggly Supermarket damaged.

Newport, Wash.—Paul Bunyan Bowling Lanes destroyed. Faulty pin-setting machine.

Spokane, Wash.—Cook Lumber Mill destroyed. Short circuit.

Tacoma, Wash.—Webster Apartments damaged. Cigarette.

Tyler, Wash.—Tyler P. O., church, school, gas station and dwellings, destroyed. Grass fire.

Genoa City, Wis.—Main building of Honey Bear Farms resort restaurant and gift shop damaged. Cause believed to be an electrical short.

Merrill, Wis.—The J. C. Penney Co. store completely demolished. Explosion caused by gas seepage from a broken main.

Milwaukee, Wis.—Dralle Paper Co., Badger Novelty Co., and Helwig Carbon Products Inc. damaged.

Milwaukee, Wis.—Four-story building, housing Cook Clean Bottle Co., bottle washing firm, damaged.

Milwaukee, Wis.—Mammy's Restaurant and Lounge damaged. Grease ignited in the kitchen.

Onalaska, Wis.—Oil-fed fire damaged business firm.

Wales, Wis.—Author Edward Harris Heath's "House on the Hill" destroyed. Fire believed caused by lightning.

Wauwatosa, Wis.—Apartment building and store damaged. Sparks from a basement incinerator.

Rawlins, Wyo.—Neuman Transit Maintenance Shop damaged.

Atikokan, Ont.—Office buildings and garage of Canadian Charleson Mining Co. destroyed.

Toronto, Ont.—Dominion Stores Ltd. Supermarket damaged.

Berthierville, Que.—Simon Lemieux shirt factory and meat market destroyed. Explosion.

Montreal, Que.—Apartment dwellings and sheds damaged.

Verdun, Que.—LaBelle Bar-B-Q restaurant and two adjacent apartments damaged. □□

CLOSED CHEST CARDIAC MASSAGE

Continued from page 875

will have stopped breathing and his heart may also have stopped by the time help reaches him.

Until now, the only means that the rescuer had of saving the victim was to apply artificial respiration. Opening the natural airway alone may help. However, if there is ventricular fibrillation it cannot be determined by the lay rescuer, nor can he hope to stop this uncoordinated twitching of the heart. In this case, the rescuers went to work with artificial respiration and closed-chest massage and transported the patient to the hospital as quickly as possible.

The only reliable method of stopping ventricular fibrillation is to send sufficient electric current through the heart to contract it and bring its twitching fibers to rest. The closed-chest defibrillator, developed for hospital use, is designed to do this. An alternating current of 5 amperes, at 440 volts, for one-quarter of a second, is sent through the victim's chest. This is done by means of electrodes, about 3 inches in diameter, placed firmly on

How about an MSA demonstration for *your* department?

You'll see a complete line of self-contained breathing apparatus for protection in oxygen deficient or highly toxic atmospheres. There are air or oxygen cylinder type demand masks, and the CHEMOX®, chemical oxygen generating unit. Protection times range from 45 minutes to 8 minutes.

For self-contained breathing protection, MSA has the Air and O_2 Mask (see below), Air and O_2 Cub and the oxygen generating CHEMOX®.

In our Gas Mask line — the M-S-A® ALL-SERVICE® Gas Mask offers protection against smoke, poisonous industrial gases, and fumes, and carbon monoxide. WINDOW-CATOR® Canister provides visual warning when to change canisters.

Arrange now for information or a demonstration. Contact your nearby MSA sales outlet. Or write, Mine Safety Appliances Co., Pittsburgh 8, Pa. In Canada: Mine Safety Appliances Co. of Canada, Ltd., Toronto 2, Ontario.

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the chest, one at the very top of the breastbone, the other at about 1 inch below the left nipple.

In these cases the external defibrillator, applied by hospital personnel, must be used to stop this twitching. In the field this device cannot be found thus the technique of closed-chest cardiac massage is advocated. If properly performed, this may produce a palpable pulse and sufficient circulation to keep the brain alive and maintain the tone of the heart.

This massage has been done successfully for as long as 105 minutes in Hopkins Hospital. If the massage is to be continued for long periods of time, it is recommended that operators alternate every five minutes. During transportation, time required to set up the defibrillator equipment in the hospital, and still maintain a hope of saving the victim, it is felt external heart massage will give this person the greatest chance of survival.

Baltimore crews are taught to place the victim on the floor; a soft mattress and the give of a bed spring do not offer sufficient resistance to compression of the heart. The heel of the hand of the operator is placed on the sternum, or breastbone, about 2 inches from the lower end. Only the heel of the hand is used. The palm of the other hand is placed on top of the first hand. Pressure is now exerted downward. This compresses the heart between the breastbone and the spinal column (the largest part of the heart lies directly under the sternum and is fixed in that position; it is not completely off to the left side as many people believe). The bones of the ribs are attached to the sternum by means of cartilage and are elastic and flexible enough to allow compression of the chest.

The heart is a valve-like chamber which allows blood to move in the correct direction when pumping and the blood in the heart is squeezed out when external pressure is applied to the chest. The correct pressure will vary according to the size of the operator and his victim. This pressure can be felt and gaged according to the resistance the operator meets.

The realization as to whether any good is being accomplished can be determined by touching the eyelids. There should or will be a slight movement. Look at the pupils of the eyes; they will dilate during cardiac arrest or standstill. If an adequate amount of blood is being moved, the pupils will start to contract. The timing will be somewhere between 60 and 80 times per minute, somewhat about the natural beat of the heart.

The emergency crew continues this action until arrival at the hospital. If possible, the hospital should be alerted beforehand as to the nature of the case and just what is being done. In Baltimore the crew members call fire department headquarters by radio which, in turn, alerts the hospital emergency room by telephone. Arrival at the hospital then calls for use of the Electrocardiagraph and External Defibrillator. Cooperation between hospital personnel and the ambulance crews most likely will contribute to saving many more lives by this method in the future.

Method easily taught

The method is simple and easily taught. It is intended that a short training film will soon be made in cooperation with the Johns Hopkins Hospital and the ambulance service of the Baltimore City Fire Department and will be made available to interested persons. By this means it is hoped this life-saving technique will be brought to many individuals who might otherwise never be instructed.

References: Journal American Medical Association, July 9, 1960; Electrical Engineering, June 1960.

No lubrication necessary
Carbon bearings (oilless)
Bronze spur gears (Oberdorfer alloy No. 16438)
No. 26 Pump
Piston-finished stainless steel shafts
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BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $249.50 No. 13 — $122.50

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

HOME FIRE INSPECTIONS

Continued from page 869

the first half month. As for observation of the men making the inspections, we are amazed at the enthusiasm. We originally felt that some of the men would have a tendency to "drag their feet" so to speak, but this is not the case. They seem to enjoy the inspections and look forward to going out each day.

The entire program has created a great deal of favorable comment among the citizens and we are receiving letters and telephone calls daily, complimenting the men on their fine work. In addition to the excellent results we feel we are obtaining, there is no question as to the public relations value of a program of this type. This is the finest thing that has happened in the Springfield Fire Division since the author entered 31 years ago. □□

FIRE PREVENTION

Continued from page 873

Nike Ajax and Hercules guided missiles in the defense.

The men of the 14th Naval District Fire Department, Honolulu, Hawaii, strive for perfection in their year-round job of fire prevention. What prevents them from reaching this goal? One word—carelessness—carelessness on the part of the public.

Preventing fires is everybody's job, and the 14th Naval District fire marshal, Laurence Duhrkoop, and the men in his department, spend 365 days out of the year to make Navy and Marine Corps personnel, their families, and the civilians who work on the bases aware of this.

They accomplish this by lectures, "clean up" campaigns and periodic inspections of Navy housing areas.

Another field of work that keeps the Navy fire department busy the year around is fire fighting training. Civilian and military fire wardens from every Navy and Marine Corps installation on Oahu are picked and trained in the methods of fire prevention and fire fighting.

Each month, fire hazard inspections are held in every building on Navy and Marine Corps installations so that when a fire occurs in one of these buildings, they know where every exit, hallway and room is, and the best means of entering the building to fight the fire.

When the public realizes that fire prevention is a year-round job and that fire prevention is their task too, they will make it an easier job for the men of the 14th Naval District Fire Department, as well as firemen from Maine to California. □□

REPUBLIC

FIRE HOSE

Contains 16 pages of information on Fire Hose in general and Republic Fire Hose in particular. General information includes: Care and Use of Hose; Do's and Don'ts; Loose Edge Tube Construction; Provar Process and Wax Treatment; jackets, yarns, linings, grades. The 30 different grades of Republic Fire Hose are included under these categories: Chemical, Factory Mutual, Fire Engine Suction, Industrial, Municipal, Special Application and Underwriters'. Also includes four pages on Couplings.

Your copy will be mailed promptly upon receipt of your request addressed to: Sales Division, Department "D", Republic Rubber, Youngstown 1, Ohio.

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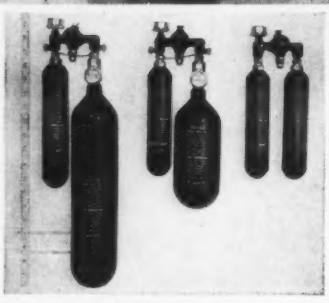

...against breathing hazards

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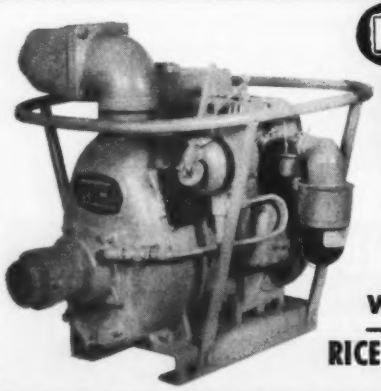

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Coming Events

Sept. 19-22 — Canadian Association of Fire Chiefs. Annual meeting, Calgary, Alberta. Secretary-Treasurer, Chief Allan H. Clark, Fire Headquarters, Lakefield, Ont.

Sept. 19-22—International Municipal Signal Association. Annual meeting, New York, N. Y. Secretary, Irvin Shulsinger, 130 West 42nd Street, New York 36, N. Y.

Sept. 20-21—Iowa Firemen's Association. Annual meeting, Guthrie Center, Ia. Secretary, A. B. Arnold, c/o Fire Department, Mason City, Iowa.

Sept. 25-28—Pacific Coast Inter-Mountain Association of Fire Chiefs. Annual meeting, Las Vegas, Nev. Secretary-Treasurer, S. E. Edmundson, 1248 Marengo St., Pasadena, Calif.

Sept. 27-30—Michigan Fire Inspector's Conference. Annual meeting, Michigan State University Kellogg Center, East Lansing, Mich. Secretary, Arthur Patriarche, 550 Gunson Street, East Lansing, Mich.

Oct. 17-21—National Safety Congress. Annual meeting, Chicago, Ill. Further information may be obtained from R. L. Forney, secretary, National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill.

Oct. 20-23—Nebraska State Firemen's Association. Annual meeting, Chadron, Neb. For information, write Chadron Fire Department.

Oct. 31-Nov. 2—Illinois Firemen's Association. Annual meeting, Springfield, Ill. Secretary, R. W. Alsip, Box 8, Champaign, Ill.

Nov. 3-5—International Rescue and First Aid Association. Annual meeting, Benjamin Franklin Hotel, Philadelphia, Pa. For further information, contact the Executive Office, 314 King Street, Alexandria, Va. □□

FIRE COLLEGES

Arizona State Fire School—Oct. 20-22, Phoenix, Ariz. For information write Chief Jake Sikes, Supervisor of Training, Phoenix Fire Department.

Florida State Fire College—Sept. 19-23, Units **103,** Rescue, Ventilation, Salvage and Overhaul; **105,** Fire Apparatus and Pumps; **204,** Fire Fighting Tactics, Sept. 26-30; Units **104,** Fire Streams; **107,** Arson Detection; **208,** Fire Department Administration. For information contact Florida State Fire College, P. O. Box 785, Ocala, Fla.

Indiana Fire Training Program—Oct. 25-27. **Fire Inspectors Course. All courses will be held at Purdue University, Lafayette. For information, write Professor Shelby Gallien, Director, Public Safety Institute, Purdue University, Lafayette, Ind.**

New York State Fire Instructors Conference—Oct. 23-28, Elmira, N. Y. **Regional Fire Administrators Conference**—Oct. 26-28, Elmira. For information, write George H. Proper, Jr., Acting Director, Division of Fire Safety, Office for Local Government, 155 Washington Avenue, Albany 10, N. Y.

Ontario Fire College—Sept. 19-23, **Pump Course;** Sept. 26-Oct. 7, **Company Officers' Course;** Oct. 17-21, **Basic Fire Inspection Practices Course;** Oct. 24-28, **Mutual Fire Aid Forum—County Fire Coordinators.** All courses will be held at the Ontario Fire College at Gravenhurst, Ont. For information, write Fire Marshal's office, Province of Ontario, 210 Huron Street, Toronto 5.

Pennsylvania State Firemen's Training School—Sept. 26-30, Basic Fire Fighting; Oct. 3-7, Advanced Fire Fighting; Oct. 17-21, Basic

Fire Fighting; Oct. 31-Nov. 4, Advanced Fire Fighting; Nov. 14-18, Fire Department Pump School. All courses to be held at the State Training School, Lewistown, Pa. For information contact Art Espey, Director, Box 631, Lewistown.

North Carolina Fire College and Pump School—Oct. 17-19, Firemen's School Building and Training Grounds, 2601 East Seventh Street, Charlotte, N. C. For information, write Chief Charles L. Burkett, Director-Conductor, c/o Salisbury Fire Department.

Rhode Island Fire College—Oct. 14-16, Newport Naval Station fire school grounds. Sponsored by Rhode Island Fire Fighters Instructors Association. For information, write Lieutenant Santo Amato, 11 Aldine Street, Providence 9, R. I.

South Carolina Firefighters Training Program—Sept. 26-30, Sullivans Island; Oct. 3-7, Gaffney; Oct. 10-14, Honea Path; Oct. 17-21, Isle of Palms; Oct. 24-28, Belton; Oct. 31-Nov. 4, Hampton; Nov. 7-11, Bowman; Nov. 14-18, Williamston; Nov. 28-Dec. 2, Gantt Water District, Greenville; Dec. 5-9, Clinton; Dec. 12-16, Winnsboro; Dec. 19-23, Wade Hampton (Greenville); Jan. 2-5, Summerville; Jan. 9-13, Cayce; Jan. 16-20, Darlington; Jan. 23-27, Maulden. For information, write H. B. Wells, Instructor, "Shady Springs," Route 1, Box 119, Prosperity, S. C.

Southwest Arson Investigation Institute—Nov. 8-12, University of Oklahoma, Norman, Okla. For information, write James Robinson, Coordinator, Public Administration and Law Enforcement Services, University of Oklahoma, Norman.

Suffolk County Field Conference—September 25, Civil Defense and Firematic Training Center, Yaphank, L. I., N. Y. For information, contact Chief Harold Hochheiser, Secretary, Fire Chiefs' Council of Suffolk County, Riverhead, L. I.

Tri-State Fire School—Nov. 15-18, **Instructors School for Company Officers,** Huntington, West Va. For information, write R. M. Myers, Secretary-Treasurer, Tri-State Fire School Association, 816 North Street, Huntington. □□

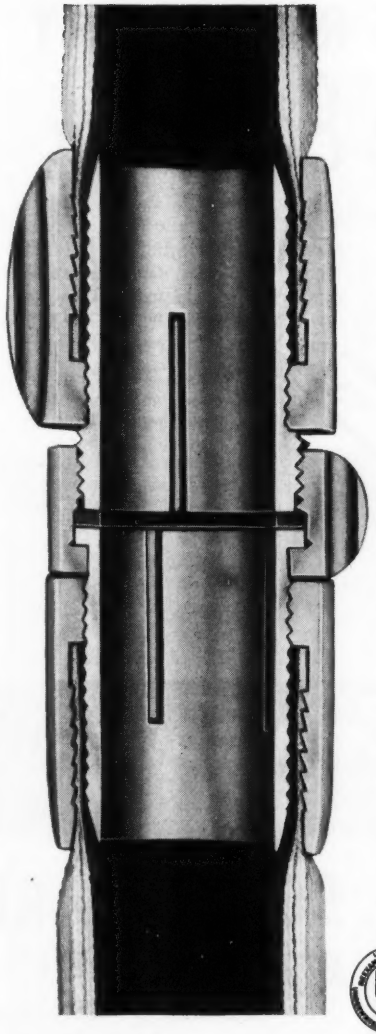
SCHOOL FIRE SAFETY

Continued from page 865

ler systems were added, and in 9,435 buildings new exit facilities such as fire escape stairs and additional doors to the outside were added.

This may seem elementary, but in 13,800 school buildings, it was found necessary to add panic hardware to one or more doors and in 24,600 buildings, improvements or replacements of manual fire alarm systems were made. Other improvements carried out also include: 1,700 partial automatic sprinkler systems, 1,175 complete automatic fire detection systems, and 2,820 municipal fire alarm boxes mounted within 100 feet of the school building.

The wave of school inspections which followed quickly on the heels of the Chicago fire resulted in the permanent closing of over 200 school buildings. About 250 more were closed, or had sections closed, on a temporary basis until life hazards were reduced. We can say that the progress indicated in the report following the survey is continuing throughout the country and many cities have pro-



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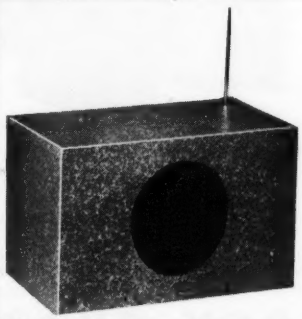

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grams of full automatic sprinkler protection in their schools.

It would perhaps be in order to indicate some of the things found in schools that are almost unbelievable. For instance, there were power lawnmowers with gasoline still in the tank, together with gasoline in gallon glass jugs, stored in school closets, many of which were unplastered. There were also highly volatile thinners, lacquers and paints in glass containers in school shops, doors wedged open and, in many instances, the careless handling of trash and combustibles that needed only a match to produce a holocaust. It was all too evident in some localities that there could have been much closer cooperation between the school authorities and the fire service.

Fire alarm system not powered

Among the things discovered were two that we consider to be outstanding. One concerned a junior high school that was built 21 years ago. A manual fire alarm system with numerous well-marked and easily accessible pull boxes had been installed. "Fine," said the fire chief, "but why not tie this system to the public fire alarm circuit?" You can well imagine the reaction when the electrician assigned to make the connection reported that the local system had never been connected to a power supply!

The other instance concerned the discovery made by a fire protection engineer while making a special survey of a school system. The fire protection engineer was overjoyed on discovering a sprinkler system in the high school, but his joy quickly disappeared when he got to the basement and found that there had been no connection made between the main control valve and the water system. This condition had existed since 1932 or a total of 27 years.

When we say that good fortune has followed us, we can certainly appreciate it from these examples and wonder why there have not been many more school fires. There is a simple statement of fact that has probably been lost sight of in many quarters following the Chicago school fire. We know now and have known since before most of today's school buildings were built, how to design and protect a school so that the lives of the pupils and teachers will be safe from fire. Fire protection engineering has never been groping for an answer. Practical methods of assuring life safety from fire that have stood the test of time and are based on sound fire protection engineering principles have been available for years.

These principles are three in num-

ber: (1) At least two safe ways out of every occupied part of the school building; (2) automatic means for prompt discovery and control of fire; and (3) restriction to a necessary minimum of the amount of material that can burn.

Fire protection engineering principles

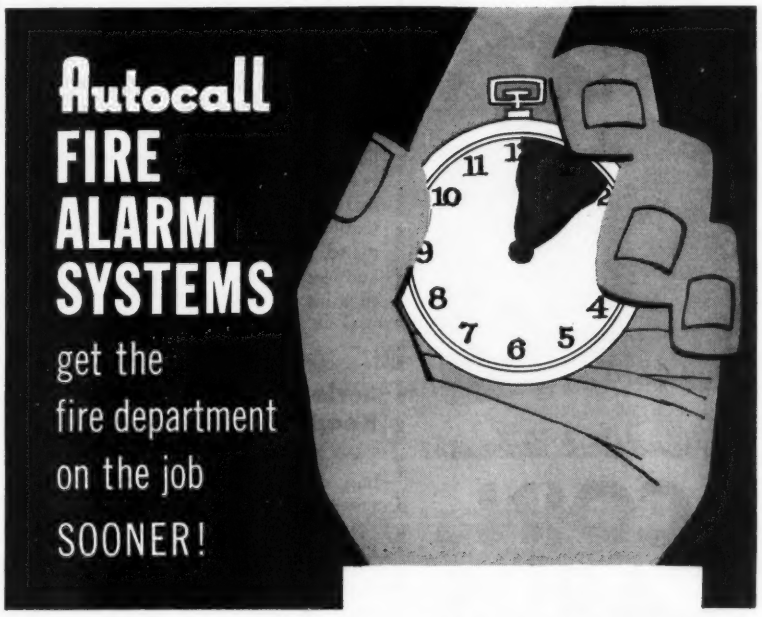
We will endeavor to build these principles into a final summation which follows:

1. The evacuation of the children from the school is the first consideration. Serious, frequent and unscheduled fire drills are in order. To the fire-protection engineer the evacuation of the children from a burning school building means that at least two safe ways of escape are provided to the outside. However, the drills could encompass the possibility that one exit may be involved in the fire. If there is a smell of smoke, do not stop to investigate. Precious moments, with fatal consequence, can be lost. Automatic means of fire discovery and notification are of great importance, but alarms are a supplement to proper exits, fire drills, good housekeeping, and all the other things that may prevent a loss of life from fire. The alarm system, to have maximum effectiveness, should be complete, covering all portions of the school, wired to notify simultaneously building occupants for evacuation, and the fire department. This latter will eliminate the oft-complained-of delayed alarm to the fire department. Every alarm system should be equipped with manual means of operation—this is a vital part of the life safety facilities of a school. An automatic sprinkler system should also cover every portion of the school, as it was shown in the Los Angeles school fire tests that if a sprinkler operated directly over a fire, there was a minimum build-up of heat, smoke and poisonous gases. Parents have a right to expect their children to be kept safe from death by fire while they are in school. There should be no division of responsibility—the adults in the school system are solely responsible for the safety of the children. Once more, we emphasize that there is no substitute for the immediate evacuation of the children from a burning school building.

2. Before any school or place of assembly is constructed, plans should be submitted to the building department and the fire department. Many features concerning life safety from fire can be built into a structure, but the knowledge of experts in the fire field is necessary to insure a maximum of fire safety—and, remember, no building is more fireproof than its contents.

3. The loss of a school to fire cannot be ignored, particularly when some of the things which are done to save the lives of the children will also save the building. Complete automatic sprinkler protection throughout the building is recommended. If partial sprinkler protection receives any consideration, a fire protection engineer should be consulted. Guessing where a fire may start is a hazardous procedure, particularly when so many of the fires are incendiary in origin.

4. It is of great importance that the closest possible cooperation exist between the school administrative system and the fire department. Modern fire departments are as interested in fire prevention as in extinguishment. They have trained men to help with the school inspections and any criticisms they may have are constructive and given only to the proper people. Some school authorities seem to feel that the fire department inspectors may become bossy and overcritical. In no instance have we found the fire department with any desire except that of total helpfulness. Their aid



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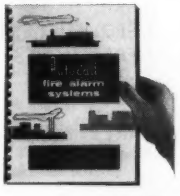

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should be solicited in helping to solve school fire inspection problems. The school administrative authorities should welcome this help. Self-inspection is, in a way, judge and jury—too much would depend on the protective self-interest of the individual.

In conclusion, we point out the fact that the cost of school construction today is great and, in many instances, old schools which are veritable firetraps, will continue to be used. The school administration owes it to the children housed in such schools, and in their care, to see that these firetraps are once and for all removed from the American scene. Every one of us has a responsibility to see that there is none of these schools in our town. Only when all of them have been eliminated can we say that those 95 children and teachers who died in Chicago on December 1, 1958, did not die in vain. The Chicago fire situation can happen anywhere, and it will unless we do something about it through every means at our command. In many cases, we will get no better protection for our children than we demand. It is up to us and we, who have knowledge, also have responsibilities to point the way. □□

Series of Bad Fires Keep Indiana Firemen Busy

Central Indiana fire fighters were kept busy during the latter part of June by a series of bad fires. A blaze in a Kokomo shopping center burned out of control for two hours on June 19, causing some $250,000 damage to a drug store and three other businesses. The fire is believed to have started when wood alcohol from a bottle accidentally broken by an employee of the drug store was ignited by a pilot light of a heater.

On the same day, a 17-year-old girl burned to death when her boy friend's convertible crashed against filling station pumps, one mile east of Chesterfield in Madison County.

Fire destroyed the Howard County Farm Bureau Co-op grain elevator and thousands of bushels of grain in West Middletown in southwest Howard County on June 27, causing damage estimated at $100,000. Two freight trains were held up for two hours by the fire as the tracks run close to the elevator. The locomotive of one of the trains, using a long cable wrapped around one wall of the elevator, pulled the wall down as a safety measure.

On the night of the 27th, fire struck a vacant livestock sale barn at Markle, causing widespread damage to an entire business block. Firemen from Markle and five surrounding towns used water from the Wabash River, a half-block away, and the town's water utility in fighting the fire which they brought under control in one hour.

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Rhode Island Instructors Plan Second Fire College

The Rhode Island Fire Fighters Instructors Association has scheduled its second annual fire college for October 14-16, 1960 at the Newport Naval Station fire school grounds. An attendance of 350 or more is expected.

In addition to courses in all phases of standard fire fighting, classes will be conducted on radiation hazards in fire fighting, aircraft crash rescue, chemistry of fire, fire service hydraulics, and scuba diving. Each course will consist of four three-hour sessions. The Rhode Island State Department of Education, Adult Vocational Division, will award certificates to all completing 12 hours of instruction.

Approximately 300 fire fighters from Rhode Island and nearby states attended the association's first fire college in October 1959, at East Providence.

The Association was formed on December 30, 1958, and up to June 30, 1960, more than 2,000 fire fighters were certified in training courses by its 19 instructors. These instructors are all drillmasters and certified with 60 hours of teacher training by the state department of education.

Additional information may be obtained from the secretary, Lieutenant Santo Amato, 11 Aldine Street, Providence 9, R. I.

July Fire Losses

Estimated fire losses in the United States during July amounted to $82,998,000, the National Board of Fire Underwriters has reported.

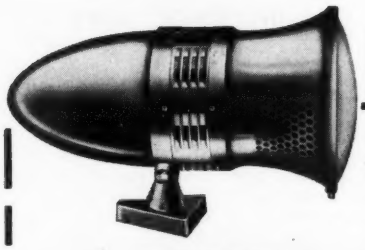
According to Lewis A. Vincent, NBFU's general manager, this $82,998,000 loss represents an increase of 0.8 per cent over losses of $82,334,000 reported for July 1959, and an increase of 0.2 per cent over losses of $82,829,000 for last June.

Losses for the first seven months of 1960 now total $656,969,000, an increase of 2.1 per cent over the first seven months of 1959, when they amounted to $643,200,000.

These estimated losses include an allowance for uninsured and unreported losses.

Suffolk County Chiefs Reelect Present Officers

The election of officers for the Fire Chiefs' Council of Suffolk County, N. Y., was held at the Stony Brook Fire Headquarters July 21. The incumbents, reelected for another year, are: Past Chief John Hancock, Coram, president; Past Chief Howard Brown, North Patchogue, first vice president; Chief Harold Karrmann, MacArthur Airport, second vice president; Chief Harold Hochheiser, Riverhead, secretary; Past Chief Rexford Heinz, Setauket, treasurer; and Past Chief Alfred Stig of Sound Beach, sergeant-at-arms.



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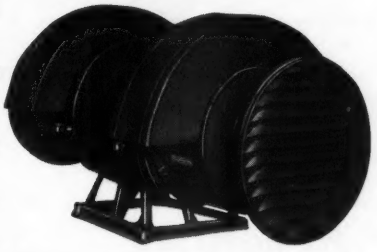

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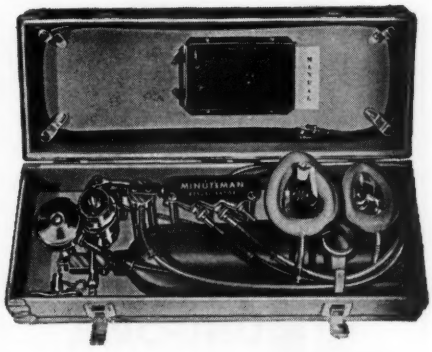

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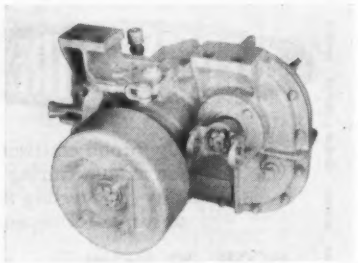
MANUFACTURERS' NEWS

Continued from page 880

Waterous Power Take-Off

The Waterous Company, 80 East Fillmore Avenue, St. Paul, Minn., has developed a new power take-off, said to be capable of transmitting full engine power to operate accessory equipment. A more

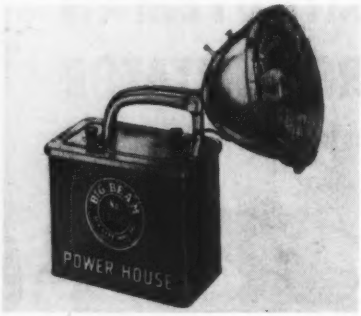


compact version of the Model TM power take-off announced last year, the Model TML is designed for use with short wheelbase chassis and is equipped for use with Electro-Matic shift.

Invalid Markers Increase

FD Products, 90 Tracey Place, Englewood, N. J., has announced that fire departments which have recently distributed invalid decals manufactured by the company include Benton Township Fire Department No. 2, Benton Harbor, Mich., and Waltham, Mass.

New Big Beam Light



The "Power House," a new clamp-on portable hand lamp, has been introduced by the U-C-Lite Manufacturing Co., 1050 West Hubbard Street, Chicago 22, Ill. Available in four models, all powered by a 7½-volt dry cell, it is claimed to project a brilliant beam over 2,000 feet.

Antrex Chest Voice

Antrex Corp., 2001 West Willow Street, Chicago, Ill., has introduced its Model CV80 "Chest Voice," a transistorized personal portable power megaphone. Said to weigh only 2 pounds, it may be used with a lavalier strap around the neck for hand-free operation. It is claimed to project the voice ⅛ mile.

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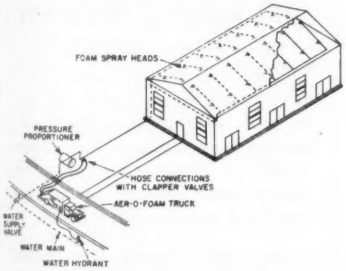
Aluminized Overhood

Fyrepel Products, Inc., Newark, Ohio, have introduced a new fireman's aluminized overhood for high heat protection. Made of Fyrepel—3M Brand Scotch Shield aluminized glass cloth fabric which

is claimed to reflect away 90 per cent of the radiant heat encountered, light in weight and quickly and easily snapped onto the brim of any fire helmet, it is said to give excellent radiant heat protection to the wearer's face, neck, ears, chest and shoulders.

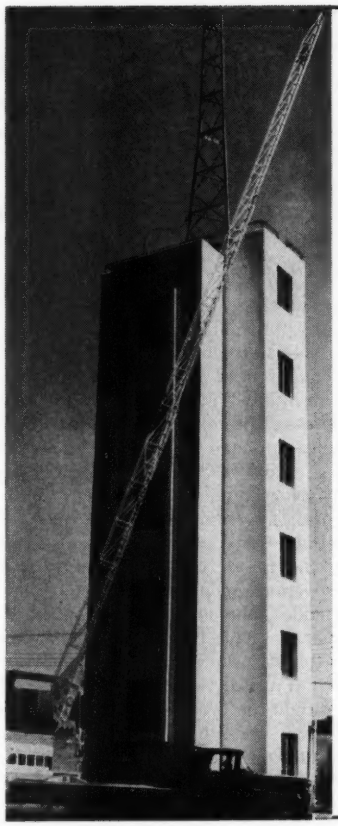
National Hot Spot System

National Foam System, Inc., West Chester, Pa., has developed a new foam system for protecting pump houses, pipe trenches, manifold pits and other "hot spots" in petroleum refineries. The plan requires a minimum amount of fixed piping plus the availability of one or more foam trucks of good capacity.



Foam spray heads are installed in a single pipe line connected to a nearby fire main. An Aer-O-Foam proportioner holding sufficient foam for several minutes operation is placed at a convenient position in the line. On the downstream side of the proportioner a hose connection is provided.

If fire breaks out, an operator starts the system by opening a single valve. Foam discharge begins immediately. As soon as the refinery foam truck arrives at the site, its foam discharge is attached to the proportioner hose connection and provides an ample amount of foam until the fire is extinguished. It is said to cost considerably less than other types of fixed systems. □□



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the round table

discussion of current fire department and fire management problems

School Fire Prevention Practices

THE NATION'S schools have now reopened for the 1960-61 year and much public attention will be focussed on fire safety education and school inspections until the conclusion of Fire Prevention Week. To find out how representative fire chiefs meet their obligations and responsibilities in this area, FIRE ENGINEERING posed the questions found on this page.

Judging from the replies received to date, there are few problems faced by the fire service in making school inspections where specific state laws or codes, plus local fire prevention ordinances, have been enacted. In some scattered instances, there are governmental jurisdiction questions involved. It might be well for the fire service in such areas to search for a means to resolve these legal stumbling blocks before a tragedy occurs.

The question of teachers and administrative persons smoking in staff lounges or other special areas appears to be of little concern. While a few cities prohibit it, the majority do not. One chief noted he preferred that it be done openly in a special area, rather than surreptitiously in a hidden place where the hazard of carelessness might be great.

Practically all chiefs report that efforts are being made to instruct teachers and custodial help in the rudiments of fire prevention. This type of training should prove to be most valuable in assuring better school fire safety at present and in the future.

Readers are invited to participate in this discussion which will be continued in the October issue. Address replies to Round Table Editor, FIRE ENGINEERING, 466 Lexington Avenue, New York 17, N. Y.

The Discussion

John J. Killen, Chief, Baltimore, Md.: Public, private and parochial schools are inspected on a regular schedule (at least four times each year) in compliance with our fire prevention code.

Our fire prevention code authorizes the above inspections and all violations are corrected in the shortest possible time, because of a mutual understanding and the excellent cooperation of the school authorities.

We do not require automatic sprinklers or automatic fire detectors in school buildings. In private assembly or school buildings, automatic Class A sprinklers must be installed on every stage requiring proscenium walls, under such stage floors, in all dressing rooms and in every storage room with an area of more than 1,000 square feet, in compliance with the Baltimore City building code.

We do not require that school fire alarm systems be connected directly to fire alarm headquarters. All school buildings with more than eight classrooms are provided with a manually operated fire alarm system. All our schools have a fire alarm box located in close proximity. In addition, a complete assignment of fire apparatus responds on notification by telephone.

Smoking in schools is limited to faculty only in designated approved areas, such as teachers lounge rooms. Each request from a principal is individually investigated by the fire prevention bureau and written approval is forwarded to the school authorities if in conformity with the following requirements: (1) Area is in a fire-resistive room; (2) Class A fire extinguisher provided; (3) sufficient large ash trays provided; (4) area is under strict supervision and inspection by the principal.

There is a program for instructing

THIS MONTH'S QUESTIONS

Do you regularly schedule public and private school fire prevention inspections? If so, do you have legal authority to inspect these schools and order violations corrected or are the inspections made on an "invitation and cooperation" basis?

Do you require automatic sprinklers or automatic fire detectors in school buildings?

Do you require that school fire alarm systems be connected directly to fire alarm headquarters?

Do you permit smoking in teachers' lounge rooms and similar restrooms?

Do you have a program for instructing teachers and school janitorial help in the rudiments of fire prevention? If so, briefly outline the subject matter.

teachers and school janitorial help in the rudiments of fire prevention.

In addition to literature on fire safety and fire prevention which is periodically distributed to the above personnel by the school supervisor of safety education, fire prevention officers frequently attend safety workshops which consist of teachers and custodial help after school hours, and lecture and demonstrate the various types of portable fire extinguishers. These teachers are from various schools, and the conditions and problems pertinent to their particular schools are discussed. Credits are given to school personnel by the department of education for attending. Cafeteria help is instructed in the various phases of fire prevention and use of first aid fire extinguishers by fire prevention officers.

Haskell Graves, Chief, Oklahoma City, Okla.: Regular inspections are made of public and private schools.

We have legal authority by ordinance to inspect these schools and order violations corrected. However, our local school authorities are keenly interested in safety and consequently they request that we make regular inspections of all their properties, submit a copy of our report to the school board office, and they make follow-up inspections to see that our recommendations are corrected and carried out. The same cooperation has been received from our private schools.

Automatic sprinklers or automatic fire detectors are not required in school buildings.

Fire alarm systems are not required to be connected directly to fire alarm headquarters.

Smoking is permitted in teachers lounge rooms only.

We work with the school board safety director on a continuous program for instructing teachers and school janitorial help in the rudiments of fire prevention. He schedules meetings for us with the safety director of each individual school, who will in turn, have a similar meeting at his or her own school. The janitorial help attend these meetings, in addition to classes in which they are instructed in fire prevention and inspection work as well as first-aid fire fighting methods.

J. H. Freeman, Chief, Tucson, Ariz.: Each summer our fire prevention bureau inspectors go through all the public and private school buildings with the school engineer or janitor for the purpose of correcting any fire hazards found. Then each month, the school administration has an inspection conducted by the principal of each school.

Our city attorney has voiced an opinion that the fire department has no legal authority in any public school. Our public schools are under county jurisdiction which is a higher governmental agency. We have, however, authority to require compliance with city fire regulations in all private schools.

Our department has not required automatic sprinklers or automatic fire detectors in schools, but we often have recommended them.

Some of our public schools are con-

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nected to the city alarm system. When schools are within reasonable distance to the alarm system wiring, the schools do connect to it.

Smoking is permitted in the teachers lounge room only.

Plans are being formulated this year to give talks to janitorial staffs of the public schools on fire prevention. We are also giving talks to the employees of the school's lunch program personnel.

Our fire prevention training program includes the common causes of fires such as careless smoking and the use of open flame, misuse of electricity, storage and use of flammable liquids, care and maintenance of heating appliances, general housekeeping and spontaneous ignition. We also instruct school personnel in the use of the different types of fire extinguishers.

R. F. Swanborough, Chief, Hamilton, Ont.: In Hamilton, fire prevention and fire safety in schools is the responsibility of the school fire safety officer. This member of the fire prevention bureau conducts a full-time, continuing program of school fire inspections and evacuation drills.

Because of the complete cooperation received from school boards and staffs, it has never been necessary to resort to legal action. Such legal authority does however exist, both under the city's Building By-Law No. 4797, and under the Fire Marshal's Act of the Province of Ontario.

Automatic sprinklers are not required in Hamilton schools. Automatic fire detectors are not required in existing schools, but are in boiler rooms and storage areas of any new construction.

School fire alarms are not required to be connected to fire alarm headquarters. However, in view of a possible reduction in insurance premiums, this is at present under consideration by both school and fire officials.

Regulation of smoking in schools has been left to the discretion of the school authorities. Smoking is, however, only permitted in boiler rooms or lounge areas.

Hamilton definitely does have a program for instructing school staffs in fire prevention and fire safety.

The instruction of school staffs is also the responsibility of the school fire safety officer. He meets with teachers, principals and caretakers, not only through their associations, but also at their individual schools. Color sound films and color slides are used extensively. Instruction is given in the use of extinguishing equipment. Hazards are explained and discussions held regarding their removal. Reasons are given for smoke barriers, door closers, panic hardware, etc., and individual problems are discussed and solutions offered.

Roscoe A. Benton, Chief, Lincoln, Neb.: We inspect public and private schools twice each year and do have the legal authority to inspect and order violations corrected.

Automatic fire detection systems are required in all schools, the coverage depending on the construction of the building. At the present time we do not require the alarm system to be connected directly to fire alarm headquarters.

Our ordinance permits smoking only in teachers lounge rooms, but at this time, the city school board does not allow smoking even in this area.

We have a program of instruction for school janitorial help in fire prevention. This covers heating and boiler rooms; electrical hazards; rubbish, incinerators and outside fires; storage and use of oils, paints and thinners; and housekeeping.

Clarke W. Longenecker, Fire Prevention Supervisor, Wichita, Kans.: The fire department makes at least two inspections of all public and private schools within the city annually. One inspection is made by teams of uniformed firemen during Fire Prevention Week. A fire drill is held, then an inspection of the building is made. Another detailed inspection is made by fire prevention bureau inspectors during the early spring. Inspections are required by rules and regulations established by the state fire marshal and violations are ordered to be corrected by the inspector.

Our building code requires automatic sprinklers on stages exceeding specified areas. This includes most intermediate schools and all high schools.

School fire alarm systems are not connected to fire alarm headquarters.

Smoking is permitted only in teachers lounges in schools. Smoking is not permitted on stages in auditoriums, in storage areas or in areas where flammable liquids or vapors are present.

The state fire marshal sends a fire safety manual annually to every teacher in the state. This manual includes a state law requiring monthly fire drills, classroom activities for each month of the school year relating to fire safety, cause and effect, types and use of fire extinguishers, and what to do in case of fire. The fire prevention bureau also makes available for assemblies, safety groups or clubs, a fire prevention program that may include films, talks or demonstrations.

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David Jenkins
Cardington, Ohio

FOR SALE

1937 American LaFrance Triple Combination Pumper with: 750 GPM Rotary Gear Pump (good condition—all brass); 12 cylinder 170 H.P. engine; 100 gal. water tank, 200 ft. 1" booster line; 2 each of 2½" and 4½" hard suction 10 ft. lengths, hose body for 1200 ft. of 2½" hose; one 14 ft. roof ladder; one 24 ft. extension ladder; oversize 8:25 x 20 traction grip tires (like new). Truck is in good serviceable condition. $1500 or highest bid.

East Cleveland Fire Dept.
14340 Euclid Avenue
East Cleveland 12, Ohio

AUTOMOBILE PUMPING ENGINE

Continued from page 878

was equipped with pneumatic tires, but air tires of capacities suitable for the heavier fire apparatus were not then available. All but one of the engines entered in the 1913 trials at New York were on solid tires, the only exception being an American-La-France Type 12, which was equipped with the Dayton Airless Cushion Tire. The Sewell Cushion Wheel Co., of Detroit, had their first exhibit at the 1913 convention of a new wheel with cushions between the spokes and outer rim. This wheel became very popular and was adopted as standard by many fire departments. The Dayton Airless, which was made for fire apparatus exclusively, had cushions inside the tire casing and in appearance resembled the pneumatics of the period.

During the first day of the 1913 convention a pneumatic tire exploded in the exhibit hall at Grand Central Palace, seriously injuring two men. This incident convinced many chiefs that pneumatics were not for them and this kind of equipment did not appear on fire apparatus in any great numbers until the third decade of the automobile fire engine era.

Starting the monstrous engines of the pioneer pumpers was a major problem of designers, and the apparatus manufactured before 1911 were all equipped with hand-cranks. The Christensen compressed air starter was first used on a fire engine in 1911, and was one of the equipment items which first made it possible to build automobile fire engines of large capacity and horsepower. Charles F. Kettering brought out the electric starter in 1912, but this did not come into general use on fire apparatus for several years.

As the second decade of automobile fire engine history came to a close in the middle 1920's we find the advertisements of not less than 20 manufacturers and assemblers of pumping engine apparatus in fire service journals. Of these 20 producers only six are still in the fire engine field. Two of the companies are specializing in the building of pumps for apparatus manufacturers and are not producing complete apparatus, as they did in the pioneer days of the industry.

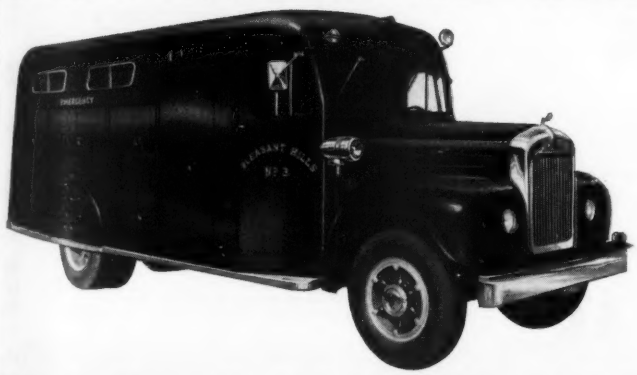
At this period—the middle 1920's—heavy-duty pumping engines of from 750 to 1,300 gpm were using power plants of 100 to 200-hp under the S.A.E. rating, and the pioneers were building their own engines. They were mostly Tee-head six-cylinder, the design being retained because of the limited production which did not warrant radical engineering changes, and because of the large valve openings which could be obtained. Engine speeds did not exceed 1,600 rpm at wide open throttle.

At that time over 75 per cent of the pumps in use on fire apparatus were of the positive-displacement type, approximately 90 per cent of these being rotary-gear design. Chemical tanks were generally used, but there was a rapidly growing tendency toward the adoption of water tanks of from 65 to 80-gallons capacity. Two-wheel mechanical brakes were universally used; drivers usually sat on the right side in open seats; and series-parallel pressure-volume centrifugals had not yet been introduced.

Our "early day" history may properly be ended at this period. The late 1920's brought a number of new trends — series-parallel pressure-volume pumps; four-wheel power-operated brakes; a more general adoption of "booster" equipment instead of chemical tanks; a general switch to pneumatic tires—and the modern era had begun. □□

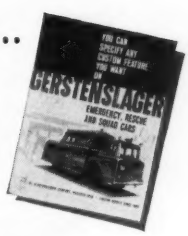
More and more, emergency rescue service is recognized as an essential function of the fire department. Even if this important equipment is not yet part of your plans, it is forward thinking to be prepared with the facts on your own local requirements... to know what this additional life-saving equipment would cost... to know what items and features are most needed to perform an effective service in your community. Why not get the facts now? There is absolutely no obligation.

FOR A WELL-PLANNED, MORE EFFICIENT RESCUE UNIT...CALL **GERSTENSLAGER**



START YOUR PLANNING... GET YOUR COPY NOW!

New brochure contains a check list of the most needed equipment carried by fire-rescue vehicles. Also illustrates and describes a wide variety of body styles and sizes. Really helpful in starting your planning.



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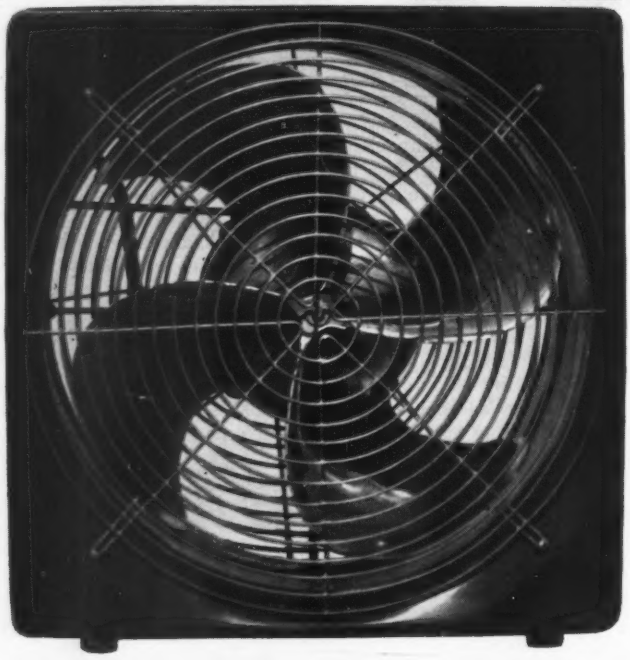
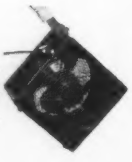


PLUS 21 4 BLADE DESIGN

HERE IS *REAL* PULLING POWER in the new Super Vac series Smoke Ejectors for fire and rescue work! Redesigned with four blades, the one-piece, cast aluminum propeller now increases the air volume over the entire blade area by 21% — a significant increase for emergency operations where seconds count. So fast, so efficient and so dependable is the "PLUS 21" propeller that it is now standard on all 12", 16" and 24" Smoke Ejectors. This means stepped up controlled ventilation of smoke-congested areas, faster rescue operations, greater safety margins.

New Shape Housing, Too!



New square-shape housing is rescue-designed for easier portability, greater strength, increased stability. It stands firmly on any of its 4 sides in emergency and carries easily (only one man) from any of its 4 corner handles.

Write for complete details now. Please note new address.

SUPER VAC

SUPER VACUUM MANUFACTURING CO., INC.
1055 East First Street • Loveland, Colorado

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FIRE ENGINEERING

SEPTEMBER, 1960

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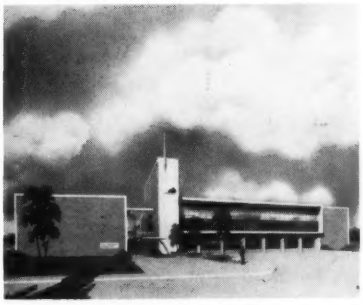
Chief Cal Johnson
FLINT FIRE DEPT.

We join the thousands of his friends in congratulating Chief Cal Johnson of Flint on the opening of this striking, highly functional new headquarters structure. Just completed at a cost of $850,000, it is the fifth and last unit of Flint's new Municipal Center, a ten-million dollar project that has provided the City with one of the most dramatic groupings of modern civic buildings in the country.

As in other Flint stations—and in most up-to-date fire departments all over America, Canada and, indeed, throughout the free world, hose is dried with CIRCUL-AIR, washed with ROTO-JET, the **ONLY complete hose-conditioning equipment in the world.**



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The ORIGINAL Electric Hose Dryer

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- No Radiant Heat — Can't Injure Hose
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WASHES • RINSES • DRAINS

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MOBILE HOSE STORAGE AND LOADING UNIT

- Racks 1800 ft. 2½" Hose
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ENDS CLOGGED NOZZLES

If you've ever had a nozzle out of action by clogging from scale, sand, or stones — here's your nozzle. Spitz-All clears itself by pressing a button. No shutting down. No changing stream position. A rugged, lightweight, constant gallonage nozzle that works easily in all positions at any pressure.

AKRON BRASS
FIRE FIGHTING EQUIPMENT

Style	Size	Description	Wt. Lbs.	GPM	Price
910	1"	Solid Base	3	23	$8.8
908	1"	Pistol Grip	4¾	23	98
905	¾"	Solid Base	3	12	88
904	¾"	Pistol Grip	4¾	12	98
915	1½"	Swivel Base Solid Base	5¾ 5¼	95-60	96

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